

CONSUMERS RESEARCH

Bulletin



May 1948

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CONSUMERS' RESEARCH



Vol. 21 • No. 5

BULLETIN

May 1948

Off the Editor's Chest

THIS is the time of year when everybody and his brother has an irresistible urge to get into the family car and go some place—almost any place will do. The desire to take a trip is particularly strong in those who were only rarely able to take their automobiles out of the garage during January and February because of the heavy snows and generally bad weather throughout a large part of the country. This involuntary restriction of travel has had the one happy result of conserving gasoline. The severe shortage of automobile gasoline that was anticipated for this spring has now been mitigated so that serious deficiencies are expected to occur only in occasional spots. The foresighted tourist, however, will be well advised to keep his gasoline tank filled at all times!

The happy-go-lucky traveler who likes to pack his bag, jump in the car, and start out may run into difficulties this year. Roads in many sections are reported to be in poor condition due to lack of maintenance during the war years. Exceptionally severe winter weather has made bad roads still worse in northern states. Where states and counties have construction programs under way, there will be time-consuming detours that were not allowed for and which might have been avoided by advance checking with the proper agencies.

One of the best sources for information on road conditions is the American Automobile Association which also gets out an excellent series of Tour Books for its members, available through local AAA clubs. In the East, Esso Road News (Room

1601, 21 West St., New York 9), published monthly May to October, provides information about principal detours and road conditions and points of interest in particular sections. Esso Touring Service (15 W. 51 St., New York 20) undertakes to furnish maps with individual routings without charge to any points in the U.S. and Canada. The American Automobile Association, Washington, D.C., provides a similar service to its members. For a general over-all guide to particular sections, *Tour-aide* maps put out by the Continental Oil Company (Continental Oil Bldg., Denver) are helpful in plotting the main route and in deciding on points to be included in a trip. It should be kept in mind, of course, that an oil company will be likely to favor a route that traverses sections serviced by its stations.

Many state governments put out excellent state maps, and supply information about points of interest and vacation facilities in their sections of the country. As a rule, a post card to the state highway department at the state capital will bring the requested information without charge.

During the past season there was considerable moaning from the managers of high-priced hotels in Florida over the fact that the era of the-sky's-the-limit spending was over and that plenty of \$20-a-day rooms were available. It is reported from time to time that it is frequently possible, as in pre-war days, to obtain hotel accommodations in the larger cities at the last minute and without advance reservations. But whether vacation ac-

(Continued on page 26)

Scientific and Technical Experts and Editors: F. J. Schlink, R. Joyce, M. C. Phillips, Helen P. Alleman, A. R. Greenleaf, Charles L. Bernier, and Dwight C. Aten. **Editorial Assistants:** Mary F. Roberts and B. Beam.

Symbols used to indicate sources of data and bases of ratings: A—recommended on basis of quality; AA—regarded as worthy of highest recommendation; B—intermediate with respect to quality; C—not recommended on basis of quality; CR—information from Consumers' Research's own tests or investigations; 1, 2, 3—relative prices, 1 being low, 3 high. Note that price and quality are completely differentiated in CR's listings; a quality judgment is independent of price; 47, 48—year in which test was made or information obtained or organized by the staff of Consumers' Research.

It will be advantageous if you will, whenever possible, send prompt notice of change of address at least 5 weeks before it is to take effect, accompanying your notice with statement of your old address with name in full. At least a month's notice must be given in any case. This rule, however, regarding long advance notice does not apply to military personnel.

CR will, of course, gladly change addresses for men and women in the services as often as required by changes in station and other circumstances.

★ ★ ★ For a brief cumulative index of 1948 BULLETINS preceding this issue, see page 26.

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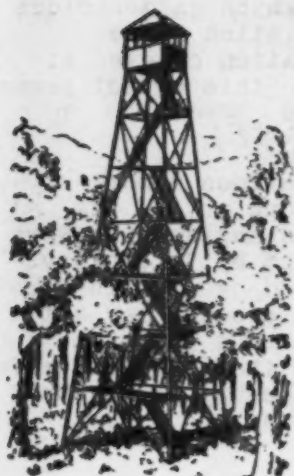
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The Consumers' Observation Post

MUCH MISLEADING PROPAGANDA is being disseminated at the present time to the effect that consumers in this country must eat less meat in order to save grain for Europe. As CR and others have pointed out from time to time, a large part of our meat supply is produced without the feeding of any grain. This fact was recently emphasized by one meat expert, who noted in a letter to the New York Times that livestock is the only means of converting grass into human food, and two-thirds of the area of the United States is in grass and roughage. He estimates that 80 percent of the beef, and 50 percent of all meat, raised in this country is produced without the feeding of any grain whatever.

* * *

SOAP, POWDERED SOAP, AND SOAP POWDERS were once universally the only widely used and effective detergents, but today there are so many new products that it is difficult to keep track of them. The problem of which to use and whether to use a synthetic detergent or soap is complex and not easily answered without careful consideration of all factors involved. In hard water districts there is a preference for the synthetic detergents which, though expensive, have the advantage of working effectively in hard water. The conditions under which soaps are at their best, reports Soap and Sanitary Chemicals, include soft or mildly alkaline water at moderate to high temperatures. No synthetic detergent approaches the performance of soap under such circumstances.

* * *

INCREASING SUPPLIES of machine-made carpets have caused a considerable drop in the demand for Oriental rugs, reports a trade association executive. Still worse, from the trade's point of view, has been the attempt to bolster the volume of sales of Oriental rugs by price cutting and consignment selling. It appears that the remedy for the situation is to be sought, not by reducing prices, but by promoting Oriental rugs more extensively as "luxury items" and high-quality merchandise. Under no circumstances is cut-price advertising to be used. It is to be hoped that consumers will strongly resist any efforts by this trade to "educate" them into paying "luxury" prices. Oriental rugs should be priced on a competitive basis with other floor coverings suitable for the home, not as luxury items.

* * *

CHRONIC FOOD ALLERGY may be a cause of irritability and fatigue in children, suggests Dr. T. G. Randolph. It appears that sensitivity to wheat and corn is encountered most frequently. The cases fall into two groups: one characterized by the tired, sluggish, and depressed child; the other by the overactive, excitable child. Both have difficulty with their schoolwork because of inability to concentrate, and lack of memory.

* * *

CELERY dusted or sprayed with Bordeaux mixture, an insecticide containing salts of copper and lime, caused acute nausea in one case reported to the New Hampshire Department of Health. The department noted that residues from this insecticide are not always washed off by the rain and recommended that in the interest of health all fruits and vegetables be thoroughly washed and, if necessary, scrubbed, to remove all traces of insecticides before serving.

* * *

ATTEMPTS TO INCREASE THE IODINE CONTENT of food in the "goiter regions" of the United States, has taken many forms. Sometimes increasing the iodine intake may be accomplished by adding a tiny proportion of an iodide to the

drinking water and applying potassium iodide to the soil on which garden crops are grown, reports the Journal of the American Medical Association. The Journal calls attention, however, to the fact that administration of even minute quantities of iodine may be followed by a form of acne; this effect seems to follow more frequently where drinking water is chlorinated.

* * *

"AN OLFACTORY ILLUSION" is the result produced by the various vapor-disseminating "deodorizers" currently much advertised, and popular, in the opinion of a writer of a letter to the editor of Chemical and Engineering News. He points out that most of these products achieve their effect by "olfactory desensitization" or dulling the sense of smell. This can be dangerous in some cases, particularly in laboratories and industrial areas where odors may act as a warning of potentially hazardous concentrations of poisonous gases and chemicals. The home, of course, offers a similar problem in that the housewife or man of the house should be able to detect instantly any unusual odor, such as that of fuel oil or gas, coal gas, fumes from hot electrical insulation, and many other warnings of danger or of fire.

* * *

HONEY is in abundant supply this year. In fact, production was 7 percent above that of the previous year. As a result the price has come down somewhat, but it is still not the bargain it ought to be. The reason, as set forth in a delightful column by Mark Sullivan entitled "Operation Bee," is that the U. S. Department of Agriculture is committed to a policy of price support on the product. It appears that the U. S. Department of Agriculture, to keep honey from "breaking the market," is buying it at something like 10c a pound and selling it abroad (to get rid of it, somehow) at 5c a pound. But note that the American consumer does not get the benefit either of this low price, or of the federal expenditure made with his money.

* * *

HOW THE COMMON COLD is spread and how it can be prevented is the subject of continuing research. It appears to be a "civilization" disease, according to Dr. C. H. Andrews, F.R.S., of the National Institute for Medical Research, whose lecture on the subject was recently reported in the Journal of the American Medical Association. He points out that, while the affliction is commoner in winter than in summer, sudden changes of temperature may precipitate colds more readily in summer. There is some evidence that used handkerchiefs may spread bacteria when they are shaken out, and it may turn out to be important to impregnate them with a disinfectant to prevent the spread of cold germs.

* * *

A NEW PRODUCT called Tuti Fruit and Vegetable Wash is useful in "revitalizing and refreshing" spinach or salad greens that have become limp, according to a publicity story in a trade journal. The product will be of interest to grocers, no doubt, but the well-educated consumer may be justified in regarding this method of rejuvenating old and aging vegetables with suspicion. The scientists tell us that the real, not the apparent, freshness of a vegetable determines, to a large extent, its vitamin content.

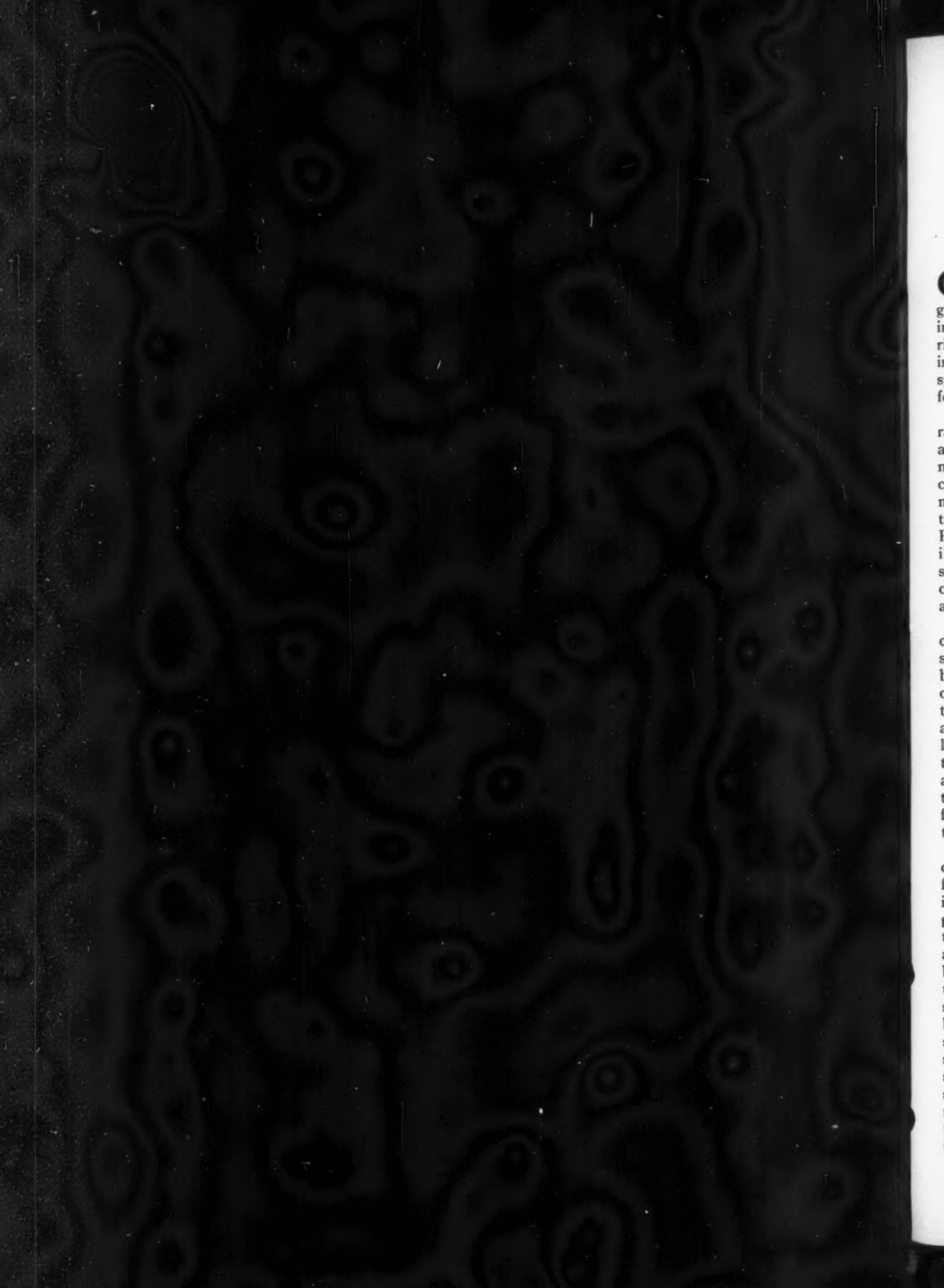
* * *

SMALL GLASS JARS OF BABY FOOD need to be opened with great care. In prying off the lid, bits of the glass may be inadvertently broken or chipped off and get into the food. Two cases of illness have been reported in the Journal of the American Medical Association of babies who suffered severe disorders from swallowing a piece of glass which had dropped in their food from the rim of the jar when it was opened.

* * *

THERE IS A THEORY strongly held in some quarters that if subsidies for research and scientific investigation were concentrated in the hands of the Federal government, instead of being left to "private interests," they would be distributed wisely and with scrupulous fairness and disinterestedness. An analysis of the present disposal of such funds made by Dr. Clarence A. Mills of the Laboratory for Experimental Medicine, University of Cincinnati, as reported

(The continuation of this section is on page 29)



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Children's Shoes

GOOD FOOT CARE for children means good shoes. In-growing toe nails, limping, toeing in, crooked toes, under- or over-riding toes, sore or red areas all indicate improper shoe fit or rough spots or ridges on the inside of footwear.

Since children's feet grow so rapidly, medium quality shoes are a practical selection for many mothers; there is, however, no compromise that can safely be made in the selection of a shoe of the correct shape and proper size. Feet that have been deformed by ill-fitting and poorly-designed shoes in childhood may be the cause of serious ill-health in an adult.

In general, the inside edge of a child's shoe should lie along a straight line. The undeveloped bone and tissue structure of a child's foot offers little resistance to pressures that might cause deviation from the natural straight line, and a pointed toe will start the foot toward the formation of a bunion. The shoe should fit the heel snugly, but should fit the foot loosely from the ball to the toe.

It is well to remember that the child may outgrow the shoes before they are worn out, sometimes in as little as two months. A good rule when buying is to leave the width of an adult thumb, or about $\frac{1}{2}$ inch, from the tip of the big toe to the end of the shoe, with the child standing. Children's shoes are outgrown when the child's big toe is less than $\frac{1}{4}$ inch from the shoe tip. It is said that every survey made of children's feet and shoes has found that most of the shoes worn were too short. "X-ray" or fluoroscope machines are used in many stores to view the foot inside the shoe, and many

parents place great reliance on them in selecting children's shoes. They are not justified in doing this, however, as the machine's use is chiefly to impress customers, and shows the bony structure of the foot, and not the fleshy tissue surrounding the bone.

It should be realized that there are differences in requirements as to fit. Of the shoes in the present test, for example, two, the *Indian Walk* and one of the moccasins, had the best shape for the foot of the average child, but might have been too loose for a very slender foot, according to an orthopedic surgeon adviser.

Special arch supports, "cookies," "Thomas" heels, and other orthopedic features are out of place on a child's shoes unless recommended by a competent medical specialist. Efforts to "correct" children's feet are often well intentioned, but such tampering by laymen with normal shoe design may do much harm. Corrective features should be used *only* on the advice of a recognized orthopedic specialist (physician).

Heels of children's shoes should be low and broad. The "Thomas" heel, which has a forward extension on the inner side of the shoe, is suitable for weak arches, but it is of no value for a normal foot.

Shoes with good leather soles protect the arch of a normal foot quite adequately, although an orthopedist may prescribe spring steel shanks for weak arches. In general, rubber composition and "cord" soles are too flexible for most feet, causing the shoe as well as the foot to lose shape easily. If the manufacturer would put on a strong leather sole first, and then cover it with rubber, composition, or cord, the sole would have a better grip without

the exaggerated flexibility of the present type. The composition soles now widely used do have very good wear (abrasion) resistance.

Chrome-tanned leather soles, to be protected against becoming quickly water soaked, must be "filled" in the process of manufacture with a mixture of greases. Leather so treated is called "waxed chrome leather"; while such soles may be stiff at first, the stiffness usually disappears after the shoes have been worn for a short time.

Midsoles, which lie between the insole and outsole of shoes, are an important part of a child's shoes. A midsole of good quality leather adds considerably to the wear life and strength of the sole, but often a filler made of granulated cork or other material with a binder is used. Some of these filler layers have a considerable disadvantage in that the material tends to shift or flow with pressure and heat and do not contribute to the strength of the shoe; they may often become bumpy and uneven, making the shoe uncomfortable.

The quality of the leather used in the sole and upper of a shoe, of course, has an important bearing on the life of the shoe and also determines how long it will keep its good appearance. The quality of children's shoes has deteriorated markedly in recent years, as judged from the findings in CR's tests, and the good top-grain upper leather (which is the most desirable type due to its generally inherent resistance to scuffing) has virtually disappeared from children's shoes. Mention is made in the listings, when it has been used in the shoes tested.

Since the toes of children's shoes are likely to be scuffed and kicked, toe caps especially should be of



Edwards, No. 3868 X 8



Indian Walk, No. 332



Classmate, No. 2115



Bass, No. 681 71



Dr. Posner's, No. 7692



Official Boy Scout, No. 922G

top-grain leather. In many shoes the toe cap is sharkskin, a leather which comes pretty near to being scuffproof. Sharkskin grain is frequently embossed on other leathers, however, and it is not always possible for the consumer to tell if the cap is a true, or an artificial, shark leather. In this study positive identification was not made of the leather used in the toe caps.

Fifteen pairs of children's shoes were included in this study made by Consumers' Research. Two mail-order shoes were included, but it should be kept in mind that proper fit is considered difficult, if not impossible, to secure by mail, and CR does not recommend purchase of shoes, either children's or adults', from mail-order dealers. All the shoes tested were of the oxford or moccasin type. They were rated on design and desirability from the orthopedic standpoint by a competent orthopedic surgeon, and were subjected to tests for quality of soles and uppers. One shoe of each pair was completely dissected. A series of measurements was made on the component parts, and an examination made of the general workmanship. In the listings, these results are summed up in the rating which is based on the performance of the upper and sole leather and various construction details. Rubber heels of the shoes in this test did not mark floors badly enough to warrant comment or differentiation in the list-

ings. Heels were rubber or composition except where otherwise noted in the listings.

The rubber composition soles proved to be much more resistant to abrasion than any of the leather soles, whence all of them were given a "good" rating for this quality. The leather soles, which were not nearly so resistant to wear, were rated on their own scale of abrasion resistance, which ranged from good to poor. As already stated, however, composition soles are not wholly desirable from the orthopedic standpoint, and no shoe having a composition sole was rated higher than *B*, regardless of its other characteristics.

Any shoe which was judged poor for the normal foot from the orthopedic standpoint was not given a rating higher than *C*, regardless of its other characteristics, for reasons already explained in the text.

B. Intermediate

Bass, No. 681 71 (G. H. Bass Co., Wilton, Maine) \$7.94. Brown moccasin. Over-all orthopedic rating, good. Over-all rating based on the performance of the upper and composition sole and various construction details, good. Quality of sole (Webster Rubber Co. "Compo") as measured by thickness and resistance to abrasion, good. Uppers, chrome retan (leather tanned by two processes to obtain qualities and characteristics not obtained by one). Midsole, top-grain cowhide; no shank.

Dr. Posner's, No. 7692 (Dr. A. Posner

Shoes, Inc., New York 13) \$6.95. Brown oxford with toe cap. Welt construction (preferable to stitch-down construction). Orthopedic rating, fair. Rating based on the performance of the upper and sole leather and various construction details, fair. Quality of sole (vegetable-tanned leather) as measured by thickness and resistance to abrasion, fair. Uppers, chrome retan; toe cap, "sharkskin." Insole filler, granulated cork. Shank, flat steel with paper.

Edwards, No. 3868 X 8 (J. Edwards & Co., Philadelphia) \$6.25. Brown oxford with toe cap. Welt construction. Orthopedic rating, fair. Rating based on the performance of the upper and composition sole and various construction details, good. Quality of sole (*Raw Cord* composition) as measured by thickness and resistance to abrasion, good. Uppers, chrome retan; toe cap, "sharkskin." Insole filler, granulated cork. No shank.

Indian Walk, No. 332 (Indian Walk Footwear, N.Y.C.) \$8.95. Brown oxford with toe cap. Welt construction. Orthopedic rating, good. Rating based on the performance of the upper and sole leather and various construction details, good. Quality of sole (vegetable-tanned leather) as measured by thickness and resistance to abrasion, fair. Uppers, chrome retan; toe cap, "sharkskin." Insole filler, granulated cork. Shank, flat steel with a piece of leather. Leather heel.

Official Boy Scout, No. 922G (Gerberich-Payne Shoe Co., Mt. Joy, Pa.; Montgomery Ward's Cat. No. 24—5548) \$5.95, postpaid. Brown oxford. Welt construction. Orthopedic rating, good. Rating based

on the performance of the upper and composition sole and various construction details, fair. Quality of sole (composition) as measured by thickness and resistance to abrasion, good. Uppers and toe cap, chrome retan. Insole filler, granulated cork. Shank, wood.

Poll Parrot, No. 8135 (Roberts, Johnson & Rand, Div. of International Shoe Co., St. Louis 3) \$4.98. Brown oxford with toe cap. Stitchdown construction. Orthopedic rating, good. Rating based on the performance of the upper and sole leather and various construction details, poor. Quality of sole (waxed chrome-tanned leather) as measured by thickness and resistance to abrasion, poor. Uppers and toe cap, chrome retan. Leather midsole. Shank, wood.

Red Goose, No. 3570-3 (Red Goose Div., International Shoe Co., St. Louis 3) \$5.98. Brown oxford. Stitchdown construction. Orthopedic rating, good. Rating based on the performance of the upper and composition sole and various construction details, fair. Quality of sole (*Neolite* composition) as measured by thickness and resistance to abrasion, good. Uppers, chrome retan. Leather midsole. Shank, wood.

Sears (Sears-Roebuck's Cat. No. 15—1055) \$4.75, plus postage. Not listed in Spring and Summer 1948 catalog. Brown oxford with toe cap. Welt construction. Orthopedic rating, fair. Rating based on the performance of the upper and sole leather and various construction details, fair. Quality of sole (waxed chrome-tanned leather) as measured by thickness and resistance to abrasion, fair. Uppers, chrome retan, top



Sears, Cat. No. 15—1055



Little Yankee, No. 2000



Poll Parrot, No. 8135



Coward, No. 10E5



Vitality, No. V 281



Ward's, Cat. No. 24—5504



Buster Brown, No. F-12



Red Goose, No. 3570-3



Health Spot, No. SH5

grain; toe cap, chrome retan. Insole filler, granulated cork. Shank, wood.

C. Not Recommended

Buster Brown, No. F-12 (Brown Shoe Co., St. Louis) \$6.50. Brown oxford, with toe cap. Welt construction. Orthopedic rating, fair. Rating based on the performance of the upper and sole leather and various construction details, poor. Quality of sole (waxed vegetable-tanned leather) as measured by thickness and resistance to abrasion, fair. Uppers, chrome retan. Insole filler, granulated cork. Shank, rib steel. Heel had hard white insertions on inner side, presumably to reduce wear, although heels usually wear out faster on outer side.

Classmate, No. 2115 (Ideal Shoe Mfg. Co., Milwaukee) \$5.50. Brown oxford with toe cap. Welt construction. Orthopedic rating, poor. Rating based on the performance of the upper and sole leather and various construction details, good. Quality of sole (waxed chrome-tanned leather) as measured by thickness and resistance to abrasion, good. Uppers, chrome tan; toe cap, "sharkskin." Insole filler, granulated cork. Shank, rib steel. Leather heel of the "Thomas" type, desirable only for weak arches or for a heavy child; would be undesirable for a child of normal weight or with normal feet. Had leather arch support (undesirable).

Coward, No. 10E5 (Coward Shoes Inc., New York City) \$6.95. Brown oxford with toe cap. Welt construction. Orthopedic rating, poor; had a "Thomas" heel, undesirable for a

normal foot. Rating based on the performance of the upper and sole leather and various construction details, good. Quality of sole (vegetable-tanned leather) as measured by thickness and resistance to abrasion, poor. Uppers, chrome tan top-grain calf; toe cap, "sharkskin." Insole filler, granulated cork. Shank, rib steel. Leather heel.

Note to Subscribers—

There was such an unexpectedly large demand for the January 1948 Bulletin that our supply of that number was exhausted before we could completely fill all renewal orders calling for back issues. If there are any subscribers who do not wish to keep their copies and would like to contribute a January Bulletin, we shall be glad to reimburse the postage cost for mailing the copy to us.

Health Spot, No. SH5 (Health Spot Shoe Store, N.Y.C.) \$7.95. Brown oxford with toe cap. Welt construction. Orthopedic rating, poor. Rating based on the performance of the upper and sole leather and various construction details, fair. Quality of sole (vegetable-tanned leather) as measured by thickness and resistance to abrasion, fair. Uppers and toe cap, chrome retan. Insole

filler, sawdust. Shank, rib steel. Had leather arch support (undesirable).

Little Yankee, No. 2000 (The Yankee Shoemakers, Newmarket, N.H.) \$5.50. Brown oxford. Welt construction. Orthopedic rating, fair. Rating based on the performance of the upper and sole leather and various construction details, good. Quality of sole (waxed chrome-tanned leather) as measured by thickness and resistance to abrasion, poor. Uppers, vegetable-tanned top-grain calf. Insole filler, granulated cork. Shank, rib steel.

Vitality, No. V 281 (Vitality Shoe Co., Div., International Shoe Co., St. Louis 3) \$6.95. Welt construction. Orthopedic rating, poor. Rating based on the performance of the upper and sole leather and various construction details, good. Quality of sole (waxed vegetable-tanned leather) as measured by thickness and resistance to abrasion, good. Uppers and toe cap, chrome retan. Insole filler, granulated cork. Shank, flat steel. Leather heel had a wedge at heel front which is often painful and considered undesirable from an orthopedic standpoint.

Ward's (Montgomery Ward's Cat. No. 24—5504) \$4.50, plus postage. Not listed in Spring and Summer 1948 catalog. Brown oxford with toe cap. Welt construction. Orthopedic rating, poor. Rating based on the performance of the upper and sole leather and various construction details, poor. Quality of sole (chrome-tanned leather) as measured by thickness and resistance to abrasion, poor. Uppers, chrome retan; toe cap, chrome retan grained to resemble sharkskin. Insole filler, granulated cork. Shank, wood.

The 1948 Nail Lacquers

THE natural pink of the fingernails was once an index to their owner's health, but since women have generally taken to painting the lily, delicate pink has given way to shades of brilliant red. Many doubtless feel that it is simpler to paint a coat of colored enamel over the fingernails than to give them the care and attention that is otherwise needed to keep them in condition.

To keep the crescent-shaped area at the base of the nail beneath the horny covering in good appearance, the growing cuticle must be pushed back gently with an orangewood stick frequently, every time the hands are washed, if it can be managed. The nails and finger tips should be kept clean and free from dry hard bits of cuticle which have a tendency to accumulate dirt and grime.

In order to develop a satin-like finish, nails that are not lacquered need to be gently buffed with a chamois-covered buffer and a powder which contains a fine abrasive such as stannic oxide.

In this busy world, however, few women take the time to keep their nails in condition in the fashion of more leisurely days. A quick filing and shaping of the nails and a speedy application of colored lacquer, and their manicure is completed for the week.

This sounds like a simple process, but keeping a perfect coat of color on the nails for a week is another matter. There is, agree the fashion experts, nothing so unsightly as chipped lacquer. For those who cannot undertake to keep the colored

lacquer in perfect condition, the clear or colorless variety will be a better choice, for its chipping does not show up so strikingly. In an effort to keep the weekly application of nail lacquer in good condition for a longer period, some women have apparently avoided adequate use of soap and water, for men have been known to complain about colorfully-tipped hands that were just plain dirty. It is true, of course, that soap and water affect the gloss and staying quality of some lacquers, but in these days when emphasis on cleanliness and sanitation is practically a national virtue the woman who subordinates immaculateness to an attempt at prolonging the life of her nail lacquer may seem to be an archaic relic of the washbowl-and-pitcher era.

The problem of formulating a lacquer that is flexible, yet hard enough to withstand the abrasions of office work and household tasks, and frequent immersion in hot soapy water as in washing dishes and clothes, is not an easy one. It is important, too, that the drying time of the lacquer be as short as possible, for most women have not the patience to sit with their hands idle for very long.

In addition to these "engineering" problems of nail lacquer formulation, cosmetic chemists are faced with the fact that certain ingredients widely used in nail lacquers cause unpleasant allergic reactions in some users. Just how widespread nail polish sensitivity is and what is the particular causative factor is not

known. Recently a cosmetic company that specializes in hypo-allergenic products (in which allergy-causing ingredients are kept to a minimum) undertook to make a survey of the published literature in the field, and on the basis of the various reported cases of sensitivity came to the conclusion that the chief offender was a toluene-sulfonamide-formaldehyde resin. Resins are used in formulating most nail lacquers to increase the adhesive quality of the film to prevent its flaking off and to give it hardness.

Sensitivity to nail lacquer manifests itself most frequently as a rash or dermatitis of areas with which the nails are likely to come in contact such as the chin, cheeks, mouth, and eyelids. Rarely is there any involvement of the fingers and hands. In order to combat this drawback to the use of nail lacquer, Ar-Ex Cosmetics, Inc., has formulated a product which they claim uses resins, plasticizers, and solvents that are substantially free from allergenic factors. The company further claims that in a test of over 400 cases of sensitivity to nail lacquers, only 2% showed an allergic reaction to *Ar-Ex Nail Polish*.

Women who feel that they simply must use nail lacquer and who have experienced difficulties with other brands may wish to experiment with this brand, but it will be noted that in the listings which follow representing CR's evaluation of 10 brands recently tested, the *Ar-Ex Nail Polish* showed poor flexibility, with marked cracking and peeling. There is as

yet, apparently, no nail lacquer which combines all the desired features of good performance. None in the present test was found worthy of an *A-Recommended* rating.

The lacquers were subjected to the standardized tests worked out by United States Testing Company for measuring gloss or luster, film flexibility or brittleness, film durability or wear, length of drying time, and resistance to scratching. The methods and procedures of the various tests are summarized in Testing League Bulletin P-18, a mimeographed bulletin of United States Testing Company, 1415 Park Ave., Hoboken, N. J. The prices shown are those paid for the lacquers, exclusive of the 20% federal excise tax and local sales taxes. The high cost of merchandising nail lacquers may be reckoned from an estimate by Time magazine that it costs a manufacturer about 10 cents for the lacquer that sells for 60 cents.

All ratings are cr48.

B. Intermediate

Cutex (Northam Warren Corp., 50 E. 57 St., New York 22) $\frac{1}{2}$ fl. oz., 10c.

Deep rose. Gloss, fair. Flexibility, fair. Durability, fair. Resistance to scratching, fair. Drying time, $4\frac{1}{2}$ minutes, third best with *Chen Yu* of all the brands tested. 1

Dura-Gloss (Packed by Lorr Lab., Paterson, N.J.) $\frac{5}{16}$ fl. oz., 10c. Laurel. Gloss, a low fair. Flexibility, fair. Durability, fair. Resistance to scratching, very good, one of the two best of all tested. Drying time, $6\frac{1}{2}$ minutes, one of the two slowest of all tested. 1

Miraglo (Distributed by M.V.C. Labs., Inc., Toledo, Ohio) $\frac{1}{4}$ fl. oz., 10c. Timid pink. Gloss, good, one of two best of brands tested. Flexibility, good. Durability, good, one of two best of brands tested. Resistance to scratching, poor. Drying time, $5\frac{1}{2}$ minutes. 1

Ar-Ex Nail Polish (Ar-Ex Cosmetics, Inc., 1036 W. Van Buren St., Chicago 7) $\frac{1}{2}$ fl. oz., 60c. Fuchsia. Gloss, fair. Flexibility, poor, marked cracking and peeling. Durability, best of all tested. Resistance to scratching, very good. Drying time, 3 minutes, second best of all tested. 3

Milkmaid Perfumed Nail Lacquer (Distributed by Milkmaid, Inc., 647 Fifth Ave., New York 22) $\frac{1}{2}$ fl. oz., 60c. Clover. Gloss, one of the two poorest. Flexibility, good. Durability, fair. Resistance to scratching, a low fair. Drying time, $2\frac{1}{2}$ minutes, best of all tested. 3

Peggy Sage Manicure Polish (Peggy Sage, Inc.) $\frac{1}{2}$ fl. oz., 60c. Dusty rose. Gloss, good, one of two best of brands tested. Flexibility, good.

Durability, poor. Resistance to scratching, fair. Drying time, $4\frac{3}{5}$ minutes. 3

Revlon Lastron (Distributed by Revlon Nail Enamel Corp., 745 Fifth Ave., New York 22) $\frac{1}{2}$ fl. oz., 60c. Quiet pink. Gloss, fair. Flexibility, good. Durability, poor. Resistance to scratching, good. Drying time, $5\frac{1}{2}$ minutes. 3

* * *

The following brands were found to be inferior in performance to those immediately preceding the asterisks, although they were not so deficient in any respect as to warrant a *C-Not Recommended* rating.

Nail Brilliance by Cutex (Northam Warren Corp.) $\frac{3}{8}$ fl. oz., 39c. Pale pink. Gloss, good. Flexibility, fair. Durability, poor. Resistance to scratching, good. Drying time, 7 minutes, longest of all brands tested. 2

Chen Yu Nail Lacquer (Distributed by Chen Yu, Inc., 30 W. Hubbard St., Chicago 10) $\frac{1}{2}$ fl. oz., 60c. Sea shell. Gloss, poor, one of the two lowest of brands tested. Flexibility, good. Durability, fair. Resistance to scratching, poor. Drying time, $4\frac{1}{2}$ minutes. 3

La Cross Naylon (Distributed by Schnefel Bros. Corp., 682 S. 17 St., Newark 3, N.J.) $\frac{1}{2}$ fl. oz., 60c. Spun sugar. Gloss, a low fair. Flexibility, good. Durability, poorest of all brands tested. Resistance to scratching, poorest of all brands tested. Drying time, $5\frac{1}{2}$ minutes. 3

★ ★ ★ Corrections and Emendations to Consumers' Research Annual Cumulative Bulletin and Monthly Bulletins ★ ★ ★

Photographic
Equipment
Col. 192
ACB '47-'48

in former years at 35c and 50c) to 65c.

Pickups
Col. 237
ACB '47-'48
and
Page 25
April '47

The U.S. Government Superintendent of Documents has increased the price of *Technical Manual—Basic Photography*—TM 1-219 (sold

In listing of *Astatic*, Model 508, add "with L71 cartridge."

Radios
Page 16
Nov. '47

federal excise tax.

Motion
Picture Cameras
Page 18
Feb. '48

ond instead of 16, 32, and 64 as formerly.

The price of \$50.56 given for the RCA, Model 68R3, was an error. The correct price is \$95, including

The manufacturer informs us that the operating speeds of the *Cine-Kodak Magazine*, Model 16, are now 16, 24, and 64 frames per second instead of 16, 32, and 64 as formerly.

Arsenic and Lead Are Still Getting into the Food Supply— Sometimes in the Most Unexpected Places

RECENTLY large amounts of arsenic were found in soya sauce shipped into California by a large and well-known Illinois manufacturer of corn products (including starches, syrups, and oil—A. E. Staley Mfg. Co.). The arsenic was present in a sufficient quantity ($3\frac{1}{2}$ to 10 grains per pound) to cause serious poisoning. Many consumers were taken ill, and the cause was at first diagnosed as food poisoning. Suspicion was directed to soya sauce used by five victims. The total number of persons affected is believed to be several hundred. The danger to consumers was so great that local health authorities were instructed by teletype to seize and quarantine all soya sauce in the state. Upon investigation it was learned that the difficulty arose from use, for processing, of a supply of sodium hydroxide which had been contaminated with arsenic in a manufacturing plant which made a weed killer containing sodium hydroxide with arsenic. Approximately 80,000 gallons, or 10 carloads, of soya sauce that was believed to have been contaminated had been shipped by the Illinois sauce manufacturer to California.

Another rather surprising case of poisoning, this time with lead, also from an unexpected source, occurred several years ago when a young child suffered an acute attack of lead poisoning as a result of having eaten food from a set of toy dishes. These dishes had been bought from a reputable department store in a large eastern city and were represented as of aluminum, *and were so labeled*. A small quantity of orange juice served as part of the child's supper caused an acute abdominal upset. It was found that acids of

the orange juice had extracted lead from the so-called aluminum dishes, and although the indication of the tests was that only 0.0113 milligram (0.0000004 ounce) had been ingested, *yet that infinitesimal amount caused an attack of illness*. (Young children are very susceptible to lead poisoning.) The amount found to have caused poisoning in this case was a cause for remark, in that opinion has been that an intake of close to a milligram of lead can be tolerated per day for a considerable period (in adults).

Arsenic gets into food in many ways, usually not in the drastic and accidental fashion of the first case described. As CR has often shown in articles in past years, the almost universal practice of spraying apple and other orchards with some form of lead arsenate to protect the fruit from insects often results in definite and serious contamination of the fruit. Apples which have been sprayed are supposed to be washed thoroughly before being packed and shipped, primarily to rid them of spray residues, but because there are certain places on an apple which are very difficult to clean by washing (the depression around the stem and calyx, for instance) an excess of the poisonous spray often finds its way to the ultimate consumer. Therefore, peeling or thorough washing is an absolute necessity if one wishes to reduce to a minimum the possibility of being poisoned.

The Department of Agriculture has become aware in the past 15 years, since the book *100,000,000 Guinea Pigs* was published, of the dangers to health involved in spraying and dusting of fruits and vegetables, and for this reason has issued regulations governing the

permissible amounts of lead, arsenic, and other poisonous metals on fruits and vegetables when they are sold in interstate commerce. Unfortunately, however, the mass of technical data in the possession of the Department has not been effectively utilized in the interests of consumers. In September 1938, fruit-growing interests succeeded in persuading the Secretary of Agriculture, Mr. Henry A. Wallace, to reverse the previous policy of the Department of Agriculture (which at one stage held that *any* amount of lead would be too much), by increasing the already grossly excessive tolerance of 0.018 grain of lead per pound of fruit, to 0.025 grain per pound. In 1940 this large tolerance was doubled, to 0.050 grain per pound. Restating these figures in the customary terms of parts per million, the tolerance has been increased from 2.6 to 7.1 ppm., by a factor of nearly three to one. In the same period, the tolerance for arsenic (as arsenic trioxide) was raised from 0.01 grain per pound to 0.025 grain per pound (1.4 to 3.6 ppm.).

The harmful effects of very low concentrations of these poisons, although not immediately noticeable, are cumulative; the injury done may not become evident for years. Incorrect diagnosis is common, and hard to avoid, at times. A tiny, more or less continuous intake of lead may seem to do no harm for a decade or more; then suddenly it will cause disastrous and lasting illness, or mental breakdown, or death, or its effect may be combined with that of some other bodily ailment so as to reduce the sick person's chance of returning to health when sick, injured, suffering from infection, or undergoing an operation. In

one expert's opinion, about one-third of eczema cases were arsenical poisoning or complications of it. Arsenic is also known to cause skin cancers.

Because of the general policy of federal and state governments to protect the financial welfare of their farmer and fruit-grower friends and supporters at the expense of consumers' health, CR has found it necessary in its ratings of foods and beverages to set its own tentative tolerance, or contamination-limit. After careful consideration, CR adopted a tolerance of 0.3 ppm. of lead and 0.5 ppm. of arsenic (as arsenic trioxide). However, CR does not consider that foods having a lead or arsenic content merely below the tolerance are safe for regular consumption; even federal officials have at times admitted that any amount more than "absolutely necessary" was too much, and at all times the aim should be to hold the contaminating substances to the absolute practicable minimum.

In the manufacture of apple juice and cider, lead and arsenic are often found in excess of the permissible amounts, especially in products using the unpeeled fruit. Commercial practice in the production of fruit for home and table use requires perfect or substantially perfect fruit, but there is no doubt that from the consumers' standpoint a moderate amount of insect damage would be far preferable to perfection of appearance achieved at the cost of chemical contamination.

Lead enters the body from many causes, being often present in small amounts in candy, soda fountain syrups, sardines, baking powder, artificially colored foods and beverages, wines, maple products, and the skin and peel of many fruits and vegetables; automobile exhaust gas, garage fumes and dust, some hair dyes, paints, storage batteries, insecticides, plumbing equipment, colored chalk, tobacco, etc. In view of

these facts, it is necessary that no unnecessary intake of lead should ever be permitted. Parents particularly should take pains to see that their children do not get lead into their systems unwittingly, for unsupervised play of children often results in contact with sources of lead, such as material from old storage batteries, packages that have contained insecticides, the paint coatings on porch floors and railings, on walls, or painted toys.

The pervasiveness of the lead present in food products may be realized when it is known that in the Northwest apple-producing belt, so much lead arsenate is applied to the trees that there may be as much as 1800 pounds reaching the soil of an acre of land in a 10-year period. The accumulation of soil-poisons is so great indeed that it has interfered with crop growth, and it has been necessary to devise additions of other chemicals to the soil to neutralize the damage done to the soil characteristics by the lead arsenate. This is surely an interesting, if somewhat alarming, illustration of the dilemma which man gets into in his attempts to improve on nature and to worst the natural enemies of farm produce in the growing of crops.

Analyses were made for CR of several brands of apple juice and apple cider, which were purchased in grocery stores late in the fall of 1946. They are doubtless not representative of today's apple juice and apple cider of the same brands, but they are distinctly important as indicating the high probability of receiving an unwanted dose of lead or arsenic through a food material which perhaps many consumers would not even be aware was likely to be contaminated with a potentially poisonous substance; they also indicate the extent to which the large food distributors have not in the past concerned themselves, as they should, with the constant vigilance and care, and detailed, regular testing of products purchased for resale necessary to

insure that bottled and other products are at all times made from carefully controlled, uncontaminated raw materials. It was found that in cases where samples were purchased by CR, and prices were known, there was no correlation between high or low price and presence or absence of excessive amounts of lead or arsenic. Lead and arsenic concentrations shown are in parts per million (ppm.). An asterisk (*) denotes concentrations in excess of those accepted as permissible by CR.

* * *

S and W Apple Juice (Distributed by S & W Fine Foods, Inc., San Francisco) Lead content, 1.3* to 2.0*. Arsenic content, 0.2 to 0.9*.

Red Cheek Apple Juice (Packed by Berks-Lehigh Cooperative Fruit Growers, Inc., Fleetwood, Pa.) Lead content, none found. Arsenic content, 0.2.

Mott's Sweet Apple Cider (Packed by Duffy-Mott Co., Inc., N.Y.C.) Lead content, none found. Arsenic content, 0.3.

White Rose Pasteurized Sweet Cider (Distributed by Seeman Bros., Inc., N.Y.C.) Lead content, none found. Arsenic content, 0.3.

Mott's Sweet Cider (Packed by Duffy-Mott Co., Inc., N.Y.C.) Lead content, none found. Arsenic content, 0.3.

Dellford Sweet Cider (Distributed by Middendorf & Rohrs, N.Y.C.) Lead content, none found. Arsenic content, 0.3.

Wayne County Brand Sweet Cider (The Wayne County Produce Co., Greenpoint, L.I., N.Y.) Lead content, 0.1 to 0.8*. Arsenic content, 0.3 to 0.4.

Premier Sweet Cider (Distributed by Francis H. Leggett & Co., N.Y.C.) Lead content, up to 0.7*. Arsenic content, 0.4 to 0.5.

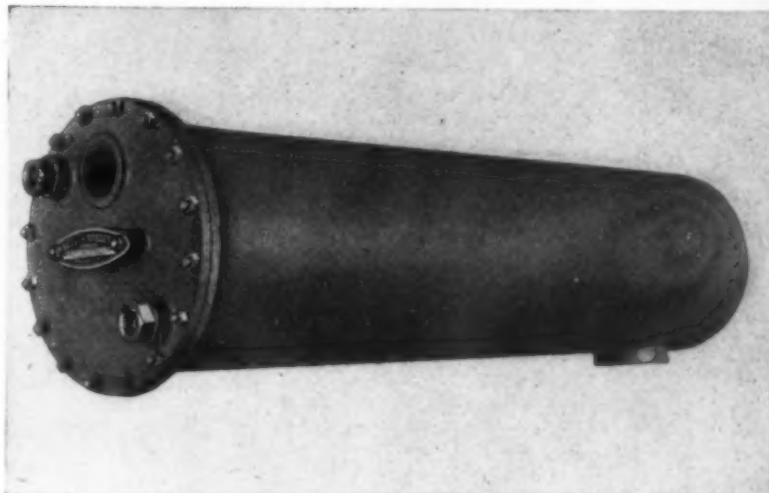
Dawes Sweet Apple Cider (Bottled by I. S. Dawes & Son Co., Inc., Im-laystown, N.J.) Lead content, none found. Arsenic content, 0.3.

Wayne County Brand Sweet Cider (The Wayne County Produce Co., Greenpoint, L.I., N.Y.) Lead content, 1.3* to 2.4*. Arsenic content, 2.2* to 6.0*.

Tankless Water Heaters

A RELATIVELY new type of system for supplying domestic hot water promises to revolutionize provisions for hot-water supply of homes. While limited to some degree in application because of its complete dependence upon the steam or hot-water heating system for the home to which it must be attached, the instantaneous or tankless heater offers an almost ideal method of heating water on any system to which it can be adapted. The tankless heater can be adapted to virtually all *automatically-fired* steam and *forced* hot-water systems, whenever the water to be heated is not excessively hard. Tankless heaters are not suited to use with hand-fired systems of any type, nor are they applicable to warm-air furnaces, because hand-fired systems cannot be depended upon under all firing and weather conditions to supply heat at the high rate during short periods that is required to take care of the demand of a tankless heater. (*Non-automatic* heating systems require a tank type of heater, in which the hot water is circulated at a slow rate and stored for future use.) Tankless heaters can be used with gravity hot-water systems fired with an oil burner or stoker, but only if controls such as motorized valves are available to maintain relatively high minimum temperatures in the boiler at all times.

The tankless heaters are like the indirect heater long used in supplying domestic hot water, but have been stepped up in size and capacity to a point where the instantaneous supply of properly heated water is equal to the entire demand of the home. Since the unit can supply hot water as fast as it is needed, a tank to provide storage capacity is unnecessary. In addition to the obvious saving of



Typical Tankless Water Heater

space, advantages of eliminating the tank include: An assurance of clean water, owing to the fact that there is no longer any place for sediment to collect; saving the cost and eliminating the bother of periodical tank replacements; and more effective insulation made possible by the compactness of the new system.

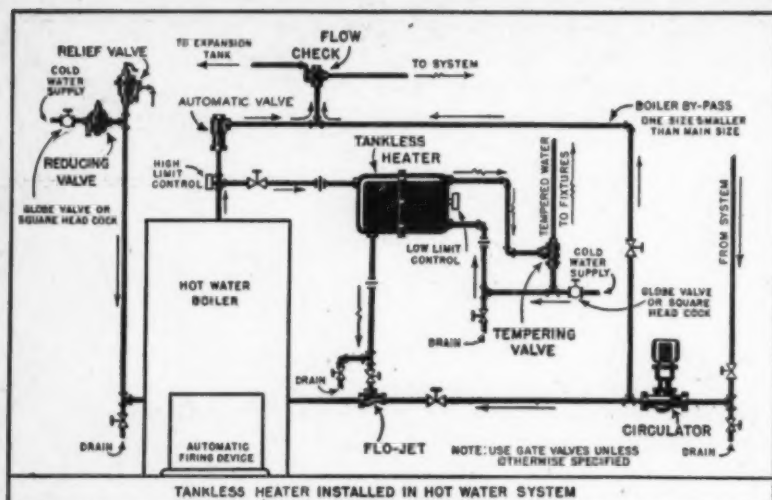
In a conventional storage type system, unless the storage tank is well insulated, there is a considerable heat loss by radiation and convection at all times, whether water is being used or not, and it costs money just to keep a large quantity of water hot hour after hour, often while none is being used. With the tankless systems, much of this cost is eliminated; they can supply abundant hot water much more cheaply than any other type of system during the heating season, and at a cost comparable to other systems in the summer.

In the conventional system for heating water, the amount of hot water that can be drawn is determined by the size of the storage tank, and when the supply in the

tank has been used up, there is a wait, usually up to three hours or more, for its replenishment. An advantage of the tankless type of heater is that the hot water is replenished as fast as it is drawn off, up to a certain limiting rate of flow. If that rate is not exceeded, hot water at the desired temperature will be supplied indefinitely. In fact, even if the capacity of the instantaneous heater is exceeded, as by opening too many hot-water faucets simultaneously, only a very temporary inconvenience will result, as the supply of fully heated water will be resumed as soon as the excess faucets are closed.

Built-In Coils

Several of the newer heating boilers, particularly steel boilers designed for automatic firing, are equipped with provisions for the insertion of water heating coils of the tankless type directly into the interior of the boiler. While the net result is the same as with exterior tankless coils, there is a material saving in piping and con-



Courtesy Taco Heaters, Inc.

nections besides providing a neat-er, somewhat less expensive installation. It would thus be well to make inquiry whenever the installation of new water-heating equipment coincides with the purchase of a new boiler, or when a boiler is to be installed with the likelihood that a new hot-water system may follow. (Boilers with the provision for tankless coils, but without the actual coils, are but little, if any, more expensive than those without, so that the provision is a wise one even if the coils are not immediately needed.)

Careful Installation a Requisite

A limitation on the tankless heater in addition to those already mentioned is that they *should not be installed in territories where the water contains an excessive amount of hardness.*

Installation involves critical considerations, and those should be entrusted only to a thoroughly competent plumber or heating contractor. Necessary precautions include: Location at a proper height (as high as practical above

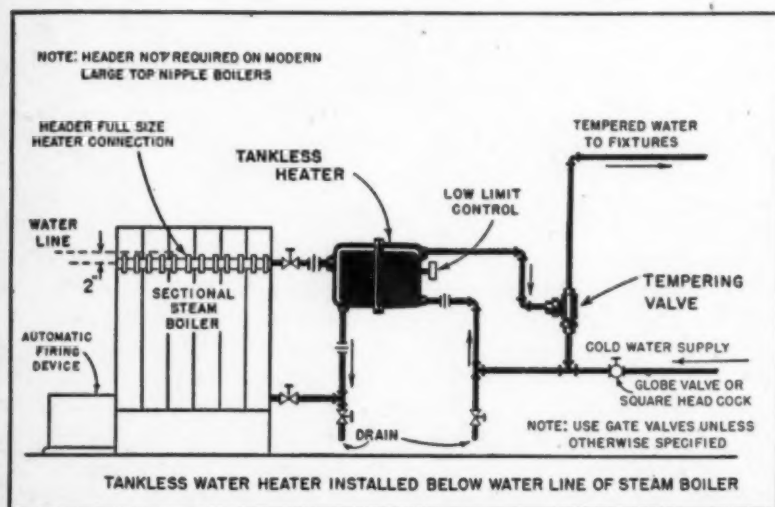
the water line on forced hot water, and just below the water line on steam boilers); the use of full-sized pipe¹ throughout, with the smallest practicable number of fittings; the use of an air vent or connection to the expansion tank to prevent failure due to the piping becoming air bound; the selection and setting of the proper controls to insure minimum boiler water temperatures without overheating the house; connecting each section of sectional cast iron boilers to the unit so that proper circulation of water into and out of the tankless heater will be obtained; and the provision of a drain at the bottom, to permit draining out the water in case the house is to be unoccupied for any considerable length of time. All of these points are well understood and are simple matters to experienced installers, but, as they are vital to proper operation, the purchaser must take pains to see that they are not overlooked.

Hot-Water Output of Heaters

Domestic heaters of this type are nominally rated in gallons of water per minute as heated from 50°F to 150°F (100°F rise) when the water in the boiler is at 180°F. This will apply to hot-water systems with forced circulation and the proper controls for maintaining a minimum temperature; it will apply also to steam systems in the summer, when they must be operated below the boiling point. With boiler water temperature at 212°F, as with steam systems in cold-weather operation, the capacity of the heater to deliver hot water will be increased by about one-third over the amount available in summer.

¹The 3/4-in. tubing used in some units is considered too small, as free flow is essential for proper water volume. While manufacturers may argue that this restriction down to the heating capacity of the units is desirable, in CR's opinion an outside controllable restriction (valve or disk orifice) would be more desirable.

The 3/4-in. connections for the hot and cold water on the Mar-Coil and Taco models are considered objectionable as they will suggest to many plumbers that 3/4-in. piping throughout the house will serve.



Courtesy Taco Heaters, Inc.

Trade practice lists the following capacities as suitable for various sizes of houses:

1 family or 1 bath.....	3½ gal. per minute
2 " " 2 "	4 " " "
3 " " 3 "	5 " " "

In the listings, the figures in parentheses following the model numbers of each heater receiving an *A* or *B* rating refer to the maximum number of families served by that model in accordance with this scale.

Cost of Tankless Heaters

Due to wide variations in installation expense, the installed cost of tankless heaters will vary so widely that the only reasonably certain guide is an estimate from the plumber selected to make the installation. For example, one house may have a steel boiler to which a tankless heater can be connected by two simple 2-in. lines; another may have a 5-section cast iron boiler, each section of which must be tapped and connected to the heater.

However, as a rough guide, the following table has been prepared listing the approximate prices to the consumer for the several models rated either *A* or *B*. Models marked (*) show *consumers' prices as quoted by the manufacturers*; models not so marked are based upon trade prices to which an average markup of one-third has been added to allow for the plumber's profit on the equipment. Obviously the consumer's prices in these cases might be more or less, depending upon the particular plumber's idea of the profit he should receive. (Plumber's margins beyond installation charges are said to vary over the range of 20% to 50%, depending upon locality.) In the West, prices may be somewhat higher in some cases, because of higher freight rates. The table, however, will afford a

generally useful guide as a relative and approximate indication of prices for tankless heaters.

Tempering Valve Recommended

In addition to the controls which have been mentioned for maintaining 180° boiler-water temperatures, etc., two additional controls are highly desirable:

1. A valve on the outlet from the heater which can be closed enough to prevent the flow of water through the heater at a higher rate than can be heated to the desired temperature. (The valve has the important advantage over the other common method that it can be opened wider to compensate for any fouling that may occur in the system with time and use.)

2. A *tempering valve* to control

thermostatically the temperature of the water leaving the heater. As steam systems produce scalding water and as even water in a hot-water heating system can reach temperatures at certain times that would be dangerous to the person washing or taking a bath, this valve is *almost mandatory for the sake of safety*. An adjustable type of tempering valve should be selected, particularly if the home is one in which an automatic clothes washer or dishwasher would be used.

While these precautions and installation directions may seem complicated, the completed installations are in reality very simple, and are well worth consideration by those who must replace their hot-water tanks or install new systems.

Tankless Water Heaters

A. Recommended

B & G, Models T-12 (1), T-14 (2), T-16 (3) (*Bell & Gossett Co.*, Morton Grove, Ill.) Horizontal cylindrical type with steel shell and cast iron removable head. Large (¾ in.) copper tubes (desirable). Units considered well constructed, properly

Model Numbers and Prices for Tankless Heaters
(Prices do not include installation, or tempering valves)

Make	Models			Approximate Prices—Maximum Capacity in Families Served		
	1	2	3	1	2	3
B & G	T-12	T-14	T-16	\$53.80	\$60.73	\$88.67
Paracoil	12	—	15	59.09	—	71.36
Fire Proven	501	—	502	—	—	—
General	100	101	—	54.27	70.00	—
Kam	80T	85T	125T	56.00*	59.00*	67.50*
Aquaheater	—	—	5	—	—	65.33
Mar-Coil	—	R2	R3	—	58.27	85.87
Taco	12	14	15	53.53	63.48	77.36
Yula ("C.H.M.")	S-20	S-24	S-30	64.80*	74.40*	84.00*

proportioned, and correctly rated. (During the war some models were made with steel tubing. These, while assumed to be no longer on the active market, are not guaranteed by the mfr. or recommended by CR.)

General, Model 100 (1) (General Fittings Co., Providence 5, R.I.) Open type copper coils encased in horizontal cast iron jacket. Boiler and domestic water arranged for counterflow for most effective heating. Adjustable $\frac{3}{4}$ -in. mixing valves available.

Paracoil, Models 12 (1 or 2), and 15 (3) (Davis Engineering Co., 1064 E. Grand St., Elizabeth, N.J.) Cast iron horizontal split shell containing heavy duty, large diameter ($\frac{3}{4}$ in.), helical copper coil. Coil removable for inspection and cleaning. Water pressure drop through heater may be expected to be less than in makes with smaller tubing. A desirable feature is the inclusion of a copper baffle to direct the flow of boiler water across the entire surface of the heating coils. Ratings on *Model 12* are especially conservative. Listed for $3\frac{1}{2}$ gal. per minute and 1 family, this model is equal in heating surface to most 4 gal. per minute heaters listed for 2 families.

Taco, Models 12 (1), 14 (2), 15 (3) (Taco Heaters, Inc., 342 Madison Ave., New York 17) Copper coils with bronze or brass headers encased in cast iron shells. Cast iron shells less subject to corrosion than steel. Outlet water dimensions of $\frac{1}{2}$ in. are smaller than most other makes. (See footnote one, page 14, col. 3.) (Plumbers are likely to use *Taco's* restricted outlets as justification for running $\frac{1}{2}$ -in. pipe throughout the house instead of $\frac{3}{4}$ in., the recommended minimum. The smaller size of water pipe would likely soon prove inadequate due to reduction of cross section by scale and sediment, even if satisfactory at the start.) Consumers should see that all domestic water pipes connected to this heater are at least $\frac{3}{4}$ in. *Taco* tempering valves, recommended for these units by the manufacturer, are non-adjustable and designed for water temperatures at the faucet of 135°F to 145°F. This lack of flexibility is considered disadvantageous.

Yula Indirect Tankless Units for Sectional Boilers, Models 1 (1), 2 (2), 3 (3) (Yula Water Heaters, Inc., 166-168 W. 225 St., New York 63) Cylindrical steel shell with multiple

outlets designed for connection to the individual sections of sectional boilers. $\frac{3}{4}$ -in. seamless copper tubing, claimed to be silver-soldered into cast-bronze header member.

B. Intermediate

Aquaheater, Model 5 (3) (Joseph E. Lewis & Co., 1303 Carroll St., Baltimore 30) A cylindrical "cheese box" shaped heater with a welded steel shell enclosing a series of pancake type coils. This coil construction assures free circulation and maximum flow of heat from the water in the boiler. Custom-fitted asbestos insulating jacket available at extra cost. As the steel casing is permanently welded closed, these units cannot be opened for cleaning, inspection, or repairs; otherwise would have warranted an *A* rating.

Fire Proven, Models 501 (1), 502 (3) (Fire Proven Products, 9 E. Lafayette Ave., Baltimore 2) Welded steel shell containing copper coils attached to bronze connectors. Entire shell is welded as on *Aquaheater* (see comment thereon). Vertical cylindrical coils do not allow for counterflow of the heated and heating water as is considered desirable in tankless units. Other details of design and rating are acceptable.

General, Model 101 (2) (General Fittings Co., Providence 5, R.I.) Same construction as the *A. Recommended Model 100*, but the 15 sq. ft. of heating surface indicates a rating of $4\frac{1}{4}$ gal. per minute as for 2 families instead of 5 gal.-3 families as listed in the circular advertising. Otherwise satisfactory, and would be rated *A* for use to serve 2 families or 2 baths.

Kam, Models 80T (1), 85T (2), 125T (3) (Kam Water Heater Mfg. Co., Inc., 239-249 Alabama Ave., Brooklyn 7, N. Y.) Cast iron shell enclosing copper coil; brass fittings, well constructed throughout. Entire head can be removed for inspection and cleaning. The $15\frac{1}{2}$ sq. ft. of heating surface in *Model 125T* is considered by CR as adequate for only $4\frac{1}{2}$ gal. per minute instead of the 5 gal. as listed. $\frac{1}{2}$ -in. tubing used in these 3 models—see comment under *Taco*.

Mar-Coil, Models R-2 (2), and R-3 (3) (Mar-Coil Heater Co., 200 Patterson Plank Road, Union City, N. J.) 12-in. diameter steel shells with removable copper coils with $\frac{1}{2}$ -in. connections for hot and cold water (see comment under *Taco*). As-

bestos jackets available. Adjustable tempering valves operated by thermostatic bellows also available. Capacity ratings satisfactory.

Yula, "C.H.M." Series, Models S-20 (1), S-24 (2), S-30 (3) (Yula Water Heaters, Inc.) Square steel box type with seamless drawn tubes of copper. Models are available with the very desirable feature of built-in mixing valves. Casing is compact (16 x 8 x 8 in. in the 2 smallest sizes), but to achieve compactness copper coils are crowded together in a manner that may restrict circulation and aggravate the effect of accumulations of rust, scale, etc.

C. Not Recommended

Kam, Models 55T, 75T (Kam Water Heater Mfg. Co., Inc.) Construction is the same as *Models 80T, 85T, 125T*, rated *B*. Capacity of *Model 55T* is considered inadequate for even the smallest family, while *Model 75T* is overrated.

Sta-Hot, Models 10, 12, 14, 16 (Sta-Hot Heater Co., Brooklyn, N. Y.) *Models 10* and *12*, rated at $2\frac{1}{2}$ and 3 gal. per minute are below CR's $3\frac{1}{2}$ gal. minimum recommendation.

An FM-AM Table-Model Radio

C. Not Recommended

Stewart-Warner FM-AM Table Model, Model A72T3 (Stewart-Warner Corp., 1826 Diversey Parkway, Chicago 14) \$79.95. Wood cabinet with walnut finish; size $14\frac{1}{2}$ in. wide, $8\frac{1}{2}$ in. high, and 7 in. deep. For operation on 117 volts, ac-dc. A total of 7 tubes and a selenium rectifier were used in the AM and FM superheterodyne circuits. Covered regular broadcast and 88 to 108 mc. FM bands. Apparent quality of parts, average to poor. Workmanship, poor; accessibility for servicing, very poor. Sensitivity on AM, good; on FM, poor. Acoustical range only 150 to 4200, and entirely inadequate for proper reproduction of high-fidelity FM broadcasting. (Instruction book incorrectly stated that "...this Stewart-Warner receiver is designed to reproduce these frequency modulation broadcasts in all their tonal excellence.") Power output (volume) good on FM, only fair on AM. Leakage current, excessive. Underwriters' Laboratories' label attached.

Radios and Phonograph Equipment

Seven Table-Model Radio Receivers

CONSUMERS often forget that all small radio receivers necessarily have extremely limited tonal qualities, a fault determined by the small size of the cabinet and speaker used (often, too, by poor circuit design). Nevertheless, there can be a considerable variation in this respect among sets of similar size, and it is worth while to listen carefully to any set under consideration, preferably for several minutes, as some receivers have an unpleasant quality which, although tolerable when heard briefly, may be distinctly annoying when listened to over a period of an hour or so. In making this test, turn the volume level up as high as practicable, which will tend to emphasize any tendency to "blasting" or rattling.

Since in any case, satisfactory determination of the quality of the set, especially with respect to sensitivity and selectivity, cannot be reached in the salesroom, it is best when possible to make an agreement with the dealer permitting the set to be returned for exchange or refund in a few days if it is not found fully satisfactory.

Most of today's lower-priced table-model sets, as well as many console models, are of the ac-dc variety; the sets in the present group were all of this type, which gives only a limited volume of sound and usually involves high shock hazard.



Left to right:

Top row — Farnsworth, Model GT050; Silvertone.

Second row — Radiola, Model 61-8; Motorola, Model 55X11A.

Bottom row — Emerson, Model 512; RCA, Model 66X11; Fada, Model 1001.

In one of the sets, the *Fada*, Model 1001, one side of the power line was directly connected to the chassis, which is an extremely dangerous practice, and leakage currents for the remaining sets were considered very high, ranging from 3.6 to 10 milliamperes, although all the sets have the Underwriters' label. However, in general, any ac-dc set presents a serious and unavoidable shock hazard when used in the kitchen, or bathroom, or outdoors, or anywhere it is possible to come into contact with a good ground, such as a water pipe or radiator, or damp concrete, or the earth.

Reception on any radio will nearly always be improved by use of an external antenna rather than any self-contained antenna included in the set.

Two of the seven sets tested,

the *Emerson*, Model 512, and the *Fada*, Model 1001, had tuned r.f. stages and untuned mixers, which are features making for improved sensitivity and noise reduction. (It was found, however, that the *RCA*, Model 66X11, and the *Radiola*, Model 61-8, gave equivalent performance without this feature.)

The *Radiola*, Model 61-8, made by *RCA* was considered the best buy in either the present group or the group of 5 table models reported in the March 1948 BULLETIN. The *Bendix*, Model 0636C, reported in March is considered closely equivalent to the *Silvertone*, the *Radiola* 61-8, the *RCA* 66X11, and the *Emerson* 512 included in the present report. It was the least expensive, yet it gave performance equal to or superior to the others in all respects.

All of the sets in this test covered the regular broadcast band only. Because of the high leakage currents, none was rated higher than *B. Intermediate*. All sets, except the *Fada* and *Radiola*, had provision for connecting an external antenna. Accessibility for servicing varied from fair to excellent.

B. Intermediate

Radiola, Model 61-8 (RCA Victor Div., Radio Corp. of America, Camden, N.J.) \$19.95. Brown plastic cabinet, $11\frac{1}{2} \times 7 \times 6\frac{1}{4}$ in. Available in white at \$2 extra. Sensitivity and selectivity, good. Acoustic quality good for a table set. Approximate acoustical range, 140-4000 cycles (fair). Power output (volume), good. Parts and construction, very good. Considered best buy of sets tested, in construction and performance. Appeared to be same set as *RCA*, Model 65X1, selling at \$24.95, except for printing on dial face. 1

Emerson, Model 512 (Emerson Radio & Phonograph Corp., New York City) \$29.95. Cabinet of $\frac{3}{8}$ in. plywood with mahogany veneer, $11\frac{3}{8} \times 6 \times 7\frac{3}{4}$ in. Sensitivity, good; selectivity, poor. Approximate acoustical range, 160 (poor) to 4700 (good) cycles. Acoustic quality, good, on par with *Radiola*. Power output, fair. Quality of parts and construction, fairly good. 2

Motorola, Model 55X11A (Galvin Mfg. Corp., Chicago) \$25.95. Brown plastic cabinet, $11\frac{1}{4} \times 6\frac{3}{8} \times 6\frac{1}{4}$ in. Sensitivity, fairly good; selectivity, good. Approximate acoustical range, 180 (poor) to 4000 (fair) cycles. Acoustic quality, fairly good. Power output, fair. Quality of parts and workmanship, good. 2

RCA, Model 66X11 (RCA Victor Div., Radio Corp. of America) \$34.95. Brown plastic cabinet, metal-work grille, $13\frac{1}{2} \times 8\frac{1}{4} \times 7$ in. Sensitivity and selectivity, good. Was no better in these respects than *Radiola*, Model 61-8, although it possessed a separate oscillator tube. Approximate acoustical range, 130-4300 cycles (fair), but acoustic quality good. Power output, good. Parts and construction, good, about the same as for *Radiola* 61-8. Good

performance, but not considered superior to the *Radiola*, Model 61-8, at a lower price. 2

Silvertone (Sears-Roebuck's Cat. No. 57-08005, Chicago) \$23.75 in catalog. Gray-green plastic cabinet, $11\frac{3}{4} \times 6\frac{1}{2} \times 6$ in. Sensitivity and selectivity, fair. Approximate acoustical range, 175-3100 cycles (poor), but the acoustic quality is fairly good. Power output, good. Quality of parts and construction, fairly good. 2

C. Not Recommended

Fada, Model 1001 (Fada Radio & Electric Co., Inc., Long Island City, N.Y.) \$29.95. Plywood cabinet, $\frac{1}{4}$ in. thick with mahogany veneer, $11\frac{1}{2} \times 6\frac{1}{8} \times 7$ in. Sensitivity, good; selectivity, fairly good. Approximate acoustical range, 180 (poor) to 3700 (fair) cycles. Power output, fair. One side of the a-c line is directly connected to the chassis. Extreme shock hazard. No Underwriters' label. A fairly well made and good performing set, except for shock hazard factor. 2

Farnsworth, Model GT050 (Farnsworth Television & Radio Corp., Fort Wayne, Ind.) \$24.95. Brown plastic cabinet, $11\frac{1}{4} \times 5\frac{3}{4} \times 5\frac{1}{4}$ in. Sensitivity, poor (worst of group); selectivity, fair. Approximate acoustical range, 180 (poor) to 4300 (fair) cycles. Tone quality, fairly good. Power output, fair. Quality of parts and workmanship, fairly good. Fairly well made, yet gave poor performance. 2

A Table-Model Radio-Phonograph Combination

C. Not Recommended

Philco, Table Model 1201-48 (Philco Radio & Television Corp., Tioga and C Sts., Philadelphia) \$69.95. Superheterodyne, 115 volts, a-c operation. Wood cabinet, $11\frac{1}{2}$ in. high, 16 in. wide, and 15 in. deep. 5 tubes used, including rectifier. Covered broadcast range, 540 to 1600 kc. A novelty type of radio-record player on which the record is played by simply pushing it through a slot in the front of the cabinet (closing the door of this slot after insertion of the record projects the record centering-pin into the record center-hole, drops the

pickup arm and starts the motor). This feature would have its principal appeal in possible use of the item as a children's phonograph, but *Philco's* price is high. Parts were of average quality; workmanship judged poor. In the unit tested, for instance, the record did not clear the record slot while being played, and the resulting friction reduced the turntable motor's speed. ¶Sensitivity of the radio section, poor (lacked needed r.f. stage); selectivity, fair. Advertising claimed "full, rich tone on records or radio," but acoustical quality on listening test was considered mediocre compared with other small receivers. Acoustical range exceptionally limited, 120 to 2200 cycles. 2 watts output (good) at 400 cycles with 10% distortion. Below 120 cycles distortion increased as frequency was lowered. Leakage current excessive (high degree of shock hazard). Record player, manufactured by Philco, played either one 10-in. or one 12-in. record. Used a *Shure P 96 S* crystal cartridge with a semi-permanent metal needle. 3

FM-AM Table-Model Radios

B. Intermediate

Pilot FM-AM Receiver, Model T521 (Pilot Radio Corp., Long Island City, N. Y.) \$107.50. Wood cabinet finished in walnut. $11\frac{1}{8}$ in. high, 17 in. wide, $11\frac{1}{2}$ in. deep. For operation on 100-125 volts, ac-dc. Covered regular broadcast band and FM band from 88 to 108 mc. Eight tubes used including the rectifier, together with a crystal used as a detector. Quality of parts, average. Workmanship considered good, except for poor fit of chassis and speaker in cabinet. Accessibility for servicing, fair. Sensitivity on both AM and FM and selectivity on AM only fair. Single beam power tube feeding an 8-in. PM speaker used in output circuit. Good acoustical quality for a table model. Approximate acoustical range: on AM, 80 to 4000 cycles, fair; on FM, 80 to 6000 with some output up to 12,000 cycles, fair. Output power, good. No shock hazard found. Carried Underwriters' Laboratories' label. The tube lineup for the FM section was not the same as that used in the *Pilotuner* (see CR's November 1947 Bulletin),

and this receiver required a high value input signal for comparatively noise-free reception. Prospective purchasers should make sure the chassis is fitted correctly in the cabinet before buying. 3

C. Not Recommended

Olympic FM-AM, Table Model, No. 7-532 (Olympic Radio & Television, Inc., Long Island City 1, N. Y.) \$39.95. For ac-dc operation. Covered standard and FM broadcast bands. Plastic case with walnut finish. Used *Fremodyne* circuit in FM section. The remarks in the listing on page 20 concerning the *Meck Converter* therefore apply. Each of two units purchased for test was found to be defective.

* * *

See also report on a *Stewart-Warner FM-AM Table Model* on page 16.

Two Radio-Phonograph Combinations

IF the two radio-phonograph combinations which are listed are representative of the quality which may be expected to be found in sets of this type during the coming year, CR feels that the position of consumers who *must* buy a radio is not a very cheerful one. Although both sets were AM-FM phonograph combinations, their acoustical range was so poor that it could only be considered useful for use on AM; these sets would appear to exemplify a point of view which several manufacturers have apparently adopted—namely, to allow the consumer at the present time only a part of the value to be derived from FM listening, that is comparatively noise-free reception (and wider dynamic range), and then, in two or three years, possibly, to come along and sell him another set which will reproduce

the full-frequency-range programs which the best FM stations are now transmitting.

C. Not Recommended

Majestic Radio Phonograph Combination, Model 8FM776 (Majestic Radio & Television Corp., Elgin, Ill.) \$229.50. For operation on 105-115 volts, 60 cycles. Cabinet, wood with mahogany finish, 35 in. high, 34 in. wide, 18½ in. deep, rather poorly made and finished. Superheterodyne circuits for regular FM and AM bands using 8 tubes (including rectifier). 10¼-in. PM loud-speaker used, of ordinary quality. Quality of parts, workmanship, sensitivity, and selectivity, poor to fair. Acoustical quality considered very poor. Approximate acoustical range, 120 to 5000 cycles, poor for set of this general class, and considered definitely inadequate for FM reception. Power output at 400 cycles with 10% distortion, 1.7 watts, wholly inadequate for a set in a price range above \$200. Although this set was marked for a-c operation only—necessary because of the a-c phonograph motor—it made use of the relatively inexpensive ac-dc chassis connected directly to one side of the power line, with consequent extreme shock hazard (however, steps had been taken in the design of the mounting and cabinet to reduce the possibility of accidental contact). Record changer, apparently of Seeburg manufacture, was mounted in a pull-out drawer arrangement. Capacity, twelve 10-in. records or ten 12-in. records. Used *Astatic L70* pickup cartridge with replaceable needle. 2

Philco FM-AM Radio Phonograph, Model 48-1264-122 (Philco Corp., Tioga and C Sts., Philadelphia 34) \$259.50. For operation on 115 volts a.c. Wood cabinet 36 in. high, 23½ in. wide, 15 in. deep. Superheterodyne circuits; used 9 tubes including rectifier. Covered regular broadcast band and 88 to 108 mc. FM band. 12-in. speaker used had a bad resonance peak at around 2200 cycles which caused occasional shrill reproduction. Accessibility for servicing, sensitivity, and selectivity all judged fair. Acoustical quality considered poor to fair. Approximate acoustical range limited to 65 to 5600 cycles by the speaker (not adequate for FM reception). Power output (volume), 6 watts at 400 cycles with 5% distortion (fair to

good). Record player of fair construction, apparently of Philco manufacture. Capacity, twelve 10-in. records or ten 12-in. records. Pickup was *Shure*, Model B 302, using sapphire needle. 3

A Phonograph Pickup

C. Not Recommended

Admiral Miracle Tone Arm (Admiral Corp., 3800 Cortlandt St., Chicago 47) Arm complete with cartridge was tested; this is part of record changer mechanism and is not sold separately. Cartridge only, \$4. Understood to utilize rubber element; its resistance varies with minute length changes in the element. Pickup designed for connection directly to an amplifier, without equalization. Response using a standard test record was found heavy below 500 cycles (characteristic of crystal pickups), decreased at the middle frequencies; there was no usable output beyond 6000 cycles. This is the type of response that reduces needle scratch at the expense of the higher musical frequencies, and it does not reproduce "complete bass-to-treble tone range with amazing fidelity" as the manufacturer claimed. The range of frequencies heard, however, was reproduced cleanly, and measured distortion was only 1% except at frequencies below 300 cycles (where it was 2 to 3%). Needle pressure, 1.5 oz. (considered high). Output was 0.8 volt using 200 volt energizing voltage (0.4 volt using 100), and considered sufficient to drive the conventional phonograph amplifier. Noise output in speaker relatively low. Direct needle noise, low. In listening tests the reproduction from this pickup was noticeably weak or lacking in the middle and high frequencies.

A Wide Range Pickup

THE *Clarkstan Wide Range Pickup*, No. 211, is designed for commercial use with turntables up to 17 inches in diameter. Ball bearings were used in the mounting for both the horizontal and vertical movement (desirable).

A very important feature of the *Clarkstan* was that it provided for use of a *replaceable needle, in a wide range pickup*. Designers and manufacturers in the past have had to sacrifice the important economic advantage of a removable needle to the user in order to obtain a wide-range frequency response without objectionable resonances. In the *Clarkstan* there was no noticeable reduction in the quality of output occasioned by the replaceable needle feature; its performance was very good indeed.

A. Recommended

Clarkstan Wide Range Pickup, No. 211 (Clarkstan Corp., 11927 W. Pico Blvd., Los Angeles 34) \$57.50 list. (Composed of *Model 210* arm at \$32.50 and *Model 201 RV Cartridge* at \$25.) Variable reluctance (magnetic) type. Used easily changed sapphire-tip needle with 0.003-in. radius tip, replacement cost \$4, list. (Tip radii of 0.0015, 0.0022, and 0.0025 in. available.) Needle pressure used, 20 grams (about 0.7 oz., adjustable down to ¼ oz.). Tracking error considered slightly excessive (for 10-in. and 12-in. records) when mounting was in accord with manufacturer's mounting instructions. The equalization circuit recommended by Clarkstan did not give full bass boost when used in conjunction with records having a 500 cycle turnover. (If the user does not obtain the amount of boost needed for his purposes using the Clarkstan circuit, a simple network to be shown in a later Bulletin will give the desired result.) In CR's tests the *Clarkstan* with corrected network gave a response (tested on sweep frequency test record) which was flat within 2 db. from 50 to 10,000 cycles, and had an output of 7 millivolts at 1000 cycles. Would require a preamplifier for use with the usual audio amplifier. Maximum distortion, some of which may have originated in the test record, under 3% over entire range. Needle talk considered somewhat higher than for GE pickup. Surface (needle) noise level, low in comparison with GE or *Pickering* pickups. Considered at

least equal to the *Pickering* in every respect, including listening test, and judged superior in some.

The Meck FM Converter

THE *Meck FM Converter* should not be classified as a receiver for musical programs in the same sense as a regular radio tuner. Its circuit, called the *Fremodyne*, is based essentially on a combination of superregenerative and superheterodyne principles and uses only two tubes, a double triode (acting as a combined oscillator, mixer, and superregenerative second detector), and a rectifier. This is *actually* an AM tuner, and in order to receive FM with it, it must be *detuned* from the usual center position where the ordinary receiver is tuned. The proper tuning point for the *Meck* and the other two-tube FM tuners is one which is difficult to locate, especially if the signal is weak. When the device was tuned a little to one side of the correct point, extreme distortion was observed. When the tuning was a little off to the other side, there was a strong hiss in evidence. In addition, since the converter operates basically as an AM tuner, the noises normally encountered in AM reception, together with those encountered in FM reception, are received, even when it is correctly tuned. Thus the device should not properly be sold as FM equipment, since it does not provide the basic and important qualities that FM affords, as compared with AM.

A similar circuit is being used in a number of FM receivers, and prospective purchasers should note that in buying an FM set, *the number of tubes used in the FM section* is of

vital significance; consumers should be wary of any set using, at the present time, fewer than six tubes (or five tubes plus rectifier) for the FM part.

C. Not Recommended

Meck FM Converter (John Meck Industries Inc., Plymouth, Ind.) \$19.95. Plastic cabinet 7½ in. long, 4½ in. high, 4½ in. deep. Covered FM band from 88 to 108 mc. Extremely noisy reception afforded, with 30 microvolt signal input. Reception "quieted" with 1000 microvolt input (very poor sensitivity). Mechanical construction considered poor to mediocre. In general, electrical performance considered most unsatisfactory. A connection recommended by manufacturer to reduce hum was regarded as extremely unsafe with respect to shock hazard. Output sounded raspy. Because of the type of circuit used, this set, in use, functioned as a transmitter with a noisy signal output sufficient to be received on an FM set up to a 1000 feet distant, in some instances. This could create a real nuisance to users of equipment of normal types, who might be tuned to the same FM station. In addition, sufficient radiation was created on some television channels to destroy television reception in the same building, in one case tried. Other serious faults were present, but space is not available for comment on these. A poor buy in spite of its low price.

Liberty and Governmental Power

"THE history of liberty is a history of the limitation of governmental power, not the increase of it. When we resist, therefore, the concentration of power, we are resisting the processes of death, because a concentration of power is what always precedes the destruction of human liberties."—From an address of President Woodrow Wilson before the New York Press Club, 1912.

Three Vacuum Cleaners

THE following report and listings summarize the completed test results of the *Air-Way Sanitizer*, the *Hoover*, Model 50, and the *Lewyt*, Model 40, vacuum cleaners.

The *Air-Way*, although basically of the conventional tank-type construction, was mounted vertically, on a cast metal base. The hose connection was at the top for the usual cleaning applications. (When the spraying attachment was to be used, the cleaner was to be turned on its side, to permit connecting the hose at the blower end.) When in the upright position on a rug or hardwood floor, the unit was quite easily tipped by a moderate pull on the hose. This might be annoying, if it should happen that the cleaner fell against and marred a highly finished piece of furniture or a vase. A replaceable paper dirt collector bag was used; this could be discarded after a single use, or emptied, re-used, and discarded when no longer serviceable. An especially undesirable feature of this cleaner was the use of aluminum tubing for the wand. The user's hands became blackened by metal which rubbed off to a marked extent that would be annoying to many. (Most cleaners use a tube or wand properly protected by plating.)

The *Hoover*, Model 50, a Hoover version of the tank-type cleaner, was of the familiar tank type with runners attached for pulling along the floor. It utilized a novel arrangement for emptying the dirt collector bag in which the end-plate was removed and the

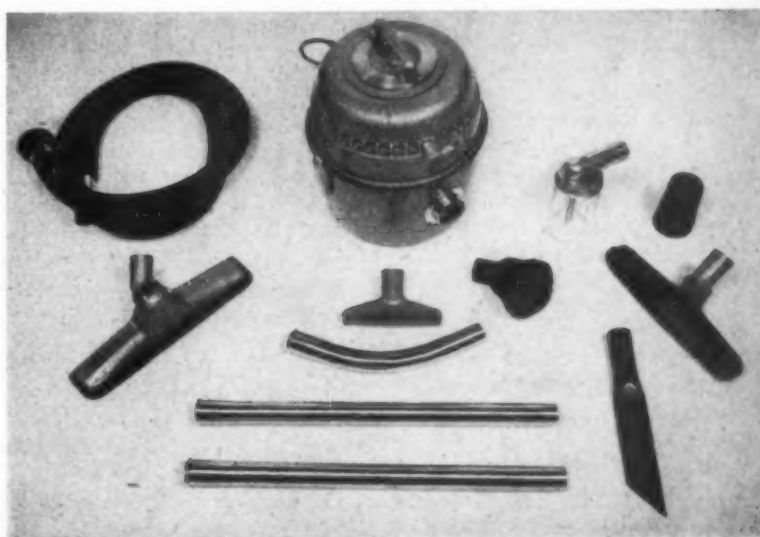
cleaner set on end. A foot-actuated lever on the outside of the cleaner was then depressed and operated an internal mechanism which imparted a quick jerk to the bag and loosened the dirt it contained.

The *Lewyt*, Model 40, was a vertical tank type. The motor

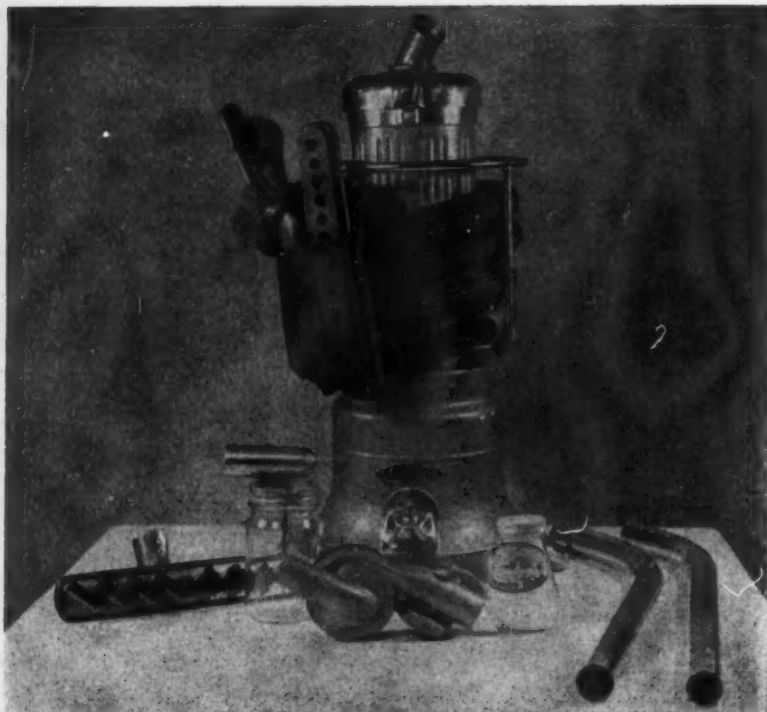
and filter in this cleaner were constructed as a unit in what might be called the lid and this in turn was clamped on the lower portion, which was the dust collecting chamber (see illustration). A replaceable paper filter was used in addition to the usual permanent cloth filter, but the paper did not act as container for the



Hoover, Model 50



Lewyt, Model 40



Air-Way Sanitizer, Model 55A

dust and dirt as in the case of the *Air-Way*.

A. Recommended

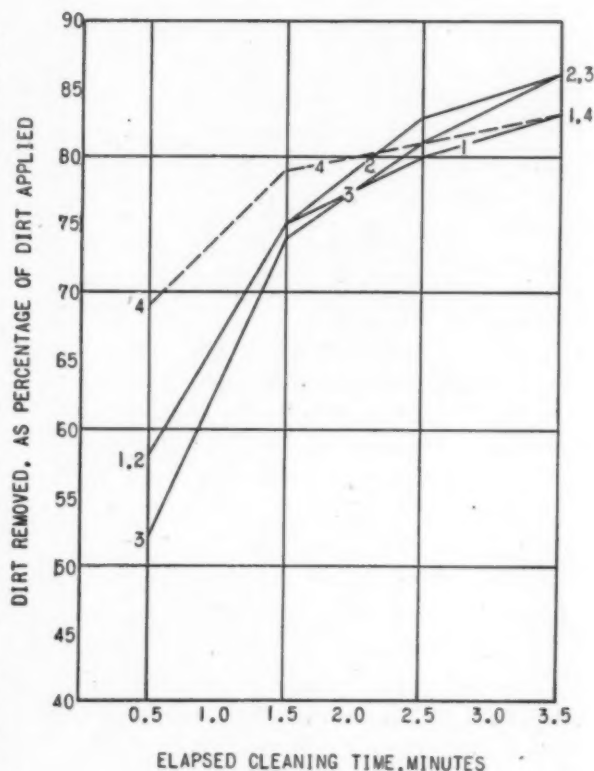
Air-Way Sanitizer, Model 55A (Air-Way Electric Appliance Corp., Toledo, Ohio) \$92.50, with attachments. For 115-volt, d-c or 25-60 cycles a-c operation. Vertical tank type. Weight, 19.7 lb. Power input in watts: rated 550 for 115 volts; measured, 650. Made use of a paper bag dirt collector (considered a definite convenience in that the dirt is not dispersed into the air of the room when the cleaner is being emptied). This cleaner, on over-all average (low, medium, and high pile rugs), along with the *Hoover, Model 50*, showed slightly better cleaning ability after 2½ minutes than the *Hoover, Model 61*, which previously had shown up as the most efficient in dirt-removal in CR's tests. Electrical leakage, 0.25 ma. under high humidity conditions (satisfactory). Withstood proof-voltage test. Radio interference created was not objectionable.

Hoover, Model 50 (The Hoover Co., North Canton, Ohio) \$79.50, with attachments. Usual tank type with run-

ners for pulling along the floor. For operation on 100 to 115 volts d.c., to 45 cycles a.c.; 105 to 120 volts, 46 to 60 cycles, a.c. Weight, 21.6 lb. Power input in watts: rated, 415; measured, 438. An unusual feature of this cleaner was the method employed to empty the built-in cloth dirt collector mentioned in the foregoing text. Although life tests of the mechanism employed and its effect on the useful life of the bag were not made, it is judged that the sudden jerking of the bag might tend to cause premature wear, especially around the bag area which came into contact with an internal spring which was part of the device. In rug-cleaning effectiveness, this cleaner considered almost the equal of the *Air-Way*

Sanitizer and slightly better in over-all cleaning ability after 2½ minutes than the *Hoover, Model 61*, previously reported as best in tests. Electrical leakage current, very low; withstood proof-voltage test. Radio interference created, not objectionable.

Lewyt, Model 40 (Lewyt Corp., Brooklyn, N.Y.C.) \$79.95, with attachments. For 115-volt, ac-dc operation. Vertical tank type. Weight, 17 lb. Power input in watts, rated 575; measured 550 at 118 volts. Considered practically the equal of the *Hoover, Model 61* (see discussion in listing of *Air-Way*), in dirt-removing ability. Had two strips of plated steel which acted as runners on bottom of dirt collector chamber. Electrical leakage current, satisfactorily low; withstood proof-voltage test. Very little radio interference created.



ELAPSED CLEANING TIME, MINUTES

1. *Lewyt, Model 40*
2. *Air-Way Sanitizer, Model 55A*
3. *Hoover, Model 50*
4. *Hoover, Model 61*

Although slight differences in cleaning ability after 2½ minutes are apparent in the above graph, these differences are regarded as relatively unimportant (since successive runs on the same cleaner necessarily always vary somewhat).

Cameras and Photographic Equipment

Twin-Lens Reflex Camera

B. Intermediate

Anso Automatic Reflex (Anso Division of General Aniline & Film Corp., Binghamton, N.Y.) \$275, with case, including federal excise tax. Fitted with coated f:3.5 *Anso Anastigmat* "taking" lens of 83 mm. focal length (made by Wollensak)



Anso Automatic Reflex

and coated focusing lens. Takes 12 pictures each $2\frac{1}{4} \times 2\frac{1}{4}$ in. on No. 120 roll film. Shutter (apparently a *Wollensak Rapax*) of the type requiring pre-setting, with rated speeds of $1/400$, $1/200$, $1/100$, $1/50$, $1/25$, $1/10$, $1/5$, $1/2$, 1 second, and bulb; lacked provision for built-in flash-synchronization. Focusing on conventional ground glass; folding magnifier in hood. Direct-vision finder also provided but suitable only for distant focusing, where parallax would not be a problem. First frame of film requires positioning through a conventional red window; remaining films were positioned auto-

matically when crank was turned. Had interlocking device to prevent double exposures. Shutter speeds were found to be approximately proportional. Lens judged superior to that on *Kodak Reflex* but inferior to a good *Tessar*. Camera was well made and operated smoothly. Film advance (spacing) at start of film was too great, with result that final frame was at very end of film. Camera was more bulky and some-

what heavier than *Automatic Rolleiflex* and arrangement of its controls was judged to be less convenient. There would seem to be no valid reason for buying the *Anso Reflex* in preference to one of the *Automatic Rolleiflexes* now available and selling at \$249 with f:3.5 *Xenar*, \$279 with f:3.5 *Tessar*; either of these lenses, if of pre-war quality, would be rated superior to the *Wollensak* offered on *Anso Reflex*. 3

Miniature Cameras

B. Intermediate

Argus Markfinder, Model 21 (Argus, Inc., Ann Arbor, Mich.) Camera,

\$42.50; excise tax, \$7.08; case, \$8.50. *Argus Cintar* f:3.5 (triplet) coated anastigmat lens of 50 mm. focal length. Entire lens unscrews to permit its use as an enlarger lens, if desired. Focusing by helical mount to closer than 3 ft. Takes pictures 24×36 mm. ($1 \times 1\frac{1}{8}$ in.) on 35 mm. film in standard cartridges. Shutter behind lens, with rated speeds of $1/200$, $1/100$, $1/50$, $1/25$, $1/10$, and bulb. Had built-in mechanism for synchronized flash. The *Markfinder* is a large view-finder and not a range-finder; total area visible in finder was about 25% greater than area of film. Reflected white lines

define the picture area with a small white cross indicating the center. This type of finder, which permits judging the picture in relation to a



Argus Markfinder, Model 21

wider view, was considered a useful improvement. Quality of lens easily the best of any 3-element lens so far tested of the same speed. Shutter speeds were approximately proportional. Camera was well made, operated smoothly, and had an excellent appearance. Camera receives a high B rating. (A rating not considered warranted, because the lens



Illustration showing how *Markfinder* works.

quality, good as it is, would not permit as much enlargement as a top-grade lens such as *Kodak Anastigmat Special*, *Leitz Elmar*, etc.)

C. Not Recommended

Bolsey 35, Model B (*Bolsey Corp.* of America, 118 E. 25 St., New York 10) \$50.63 with case, including federal excise tax. *Wollensak Velo-*

stigmat coated f:3.2 lens of 44 mm. focal length. Takes pictures about 24 x 36 mm. (1 x 1½ in.) on 35 mm. film in standard 20 or 36 exposure rolls. *Wollensak* non-setting type shutter with rated speeds of 1/200, 1/100, 1/50, 1/25, 1/10, time, and bulb. Coupled range-finder of the desirable split-image type. Focusing by simple helical mount. Quality of lens, fairly good, but not equal to that of the *Kodak Anastigmat Special* f:3.5 or f:4.5. Shutter speeds approximately proportional but shutter was unreliable, sometimes failing to open, or when open, to close. Range-finder was accurate but focusing scale was not accurate. Film was difficult to rewind without jamming. If difficulties mentioned were corrected, camera would warrant a *B-Intermediate* rating.

Perfex de Luxe (Camera Corp. of America, 844 W. Adams St., Chi-

cago 7) \$99.50 with f:2.8 lens, \$175 with f:2 lens (prices including federal excise tax). Model tested was equipped with *Wollensak Perfex Velostigmat* f:2.8 lens of 50 mm. focal length. Takes pictures 24 x 36 mm. (approx. 1 x 1½ in.) on 35 mm. film in standard cartridges. Fabric focal-plane shutter, with rated speeds of 1/1250, 1/500, 1/200, 1/100, 1/50, and 1/25 second on main dial; 1/10, 1/5, 1/2, 1 second, and bulb by means of an auxiliary slow speed dial. A single knob transports the film and winds the shutter. Had provision for synchronized flash. Coupled range-finder inaccurate, inconvenient in operation, and judged of little value. Shutter unreliable in action. Definition of lens only fair. In view of the poor quality of this so-called "de luxe" model, tests planned for on a cheaper model *Perfex* (at about \$40) will not be made.

8 mm. Projector

C. Not Recommended

De Jur (De Jur-Amsco Corp., Long Island City, N.Y.) \$139.50, 750-watt model; \$159.50, 1000-watt model; ac-dc, 110-125 volts. f:1.6 coated lens of 1-in. focal length. Helical-mount type focusing. Speed controlled by rheostat. Reverse operation available for projection and rapid rewinding. Single frames can be projected as still pictures. Capacity of reel, 400 ft. Pictures when projected jumped up and down and drifted out of focus, requiring frequent refocusing. (This occurred with several films which gave satisfactory results in other projectors.) Noisy in operation. The two models are mechanically the same except that the 1000-watt model has provision for the large lamp and has a sub-base with automatic reel for power cord.

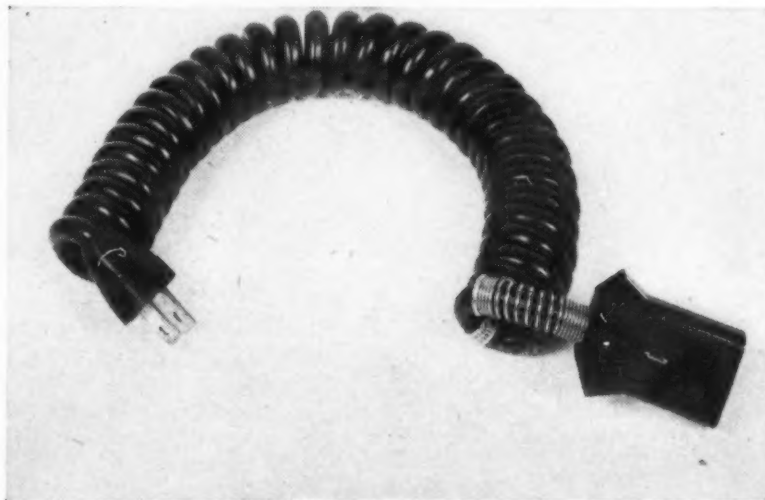
Coiled Cords for Electrical Appliances

Kellogg Coiled Kords are black coiled springs of plastic-covered electric wire in which a strong spring action is obtained by molding the plastic covering into helical tension-spring form. This action has advantages for some uses and disadvantages for others. The cords tested were made to be used chiefly with appliances containing heating units such as electric irons, table stoves, and percolators, but the manufacturer also makes other cords of the same type of construction for washing machines, etc.

The direction leaflet which was attached to each of the cords recommended that the cord be plugged into a wall outlet about 12 inches above the ironing board, when the cord was to be used for ironing, and

also suggested that, if no regular wall outlet was available at that level, a hook be located in the wall at the proper height over which the cord could be caught (a questionable practice

from a safety standpoint), or a small plastic plug-in connection be fastened to the wall at the proper height for permanent use. (The usual type of plug-in connection or receptacle sold



Kellogg Coiled Kord

in 10-cent stores and hardware stores, which is secured to the wall only by a small wood screw, would not provide a sufficiently secure fitting to withstand the repeated, varying pulls on the cord, particularly when the outlet was affixed to a plaster wall.) Instructions given on a leaflet accompanying the *Koiled Kord* for tightening a loose plug connection were not applicable, as a different type of plug from that illustrated was used in the specimens examined by CR.

Actual use tests with an electric iron were disappointing. The cord was indeed held out of the way but the pull of the spring cord increased the effort needed to push the iron so much that one operator was tired after a few minutes' work. In addition there was, naturally, a continuous tension tending to pull the back of the iron into line with the cord, and this had to be constantly resisted by the user. One user was bothered by the plug's pulling out of its socket whenever she worked where the cord was extended to anywhere near its full length. The assembly was so difficult and awkward to use that the three users felt the disadvantages far outweighed the single advantage of having the cord held out of the way by the spring action.

The objections noted would not be of any significance with other uses of such a cord (which is made under the name *Recoil* for washing machines), as, for example, on a heavy lamp, a radio receiver, fan, heater, or other appliance which stands in one place, or at least does not have to be moved back and forth frequently in use.

In addition to the use tests, the cords were given laboratory examinations, which included

an accelerated aging test, a stretching test, and inspection for quality of materials and workmanship which might affect use during normal life.

In studying the properties of the cord with respect to accelerated aging, sections of the insulating covering were cut from one of the cords and their tensile strength was measured. The uncut part of the cord was then placed in an oven at 70°C (158°F) for 7 days, after which the tensile strength of additional pieces cut from the aged cord was measured. These showed an average increase in tensile strength of about 8.3% and a decrease in elongating properties of about 17%. In the second part of the test an uncut cord specimen was placed in an oven at 70°C and left there for 29 days, after which it was inspected for evidence of deterioration. No visible changes in dimensions or shape of the cord could be detected.

In the stretching test the cords were installed in a machine which simulated actual use in hand ironing. The attachment cap was fastened to a fixed support with blades of the cap in the same position they would take if plugged into a wall receptacle. The appliance plug was attached to a movable member and in a vertical position as if plugged into a flatiron in the working position. The movable member traveled back and forth so that the cord was stretched 30 inches beyond its retracted length, at the rate of 14 times per minute. This was carried out for over a million cycles for each of the four specimens used in this test, one of which had previously been subjected to the 29-day accelerated aging test. The cords were inspected at inter-

vals throughout the stretching test but no breaks or short-circuits occurred.

B. Intermediate

Kellogg Koiled Kord (Koiled Kord Div., Kellogg Switchboard & Supply Co., 6624 S. Cicero Ave., Chicago 38) \$2.95. Black plastic-covered coiled-spring appliance cord. Weight of cord with attachment cap and plug, approximately 11 oz. Length of cord retracted, 13 in.; stretched to full length, 8 ft. 7 in. Outside diameter of coils, in retracted position, 1¼ in. Well constructed. Non-corrosive metallic parts were used in both cap and plug. Indicated durability and safety, excellent, but as noted in text, would appear to be undesirable for use in ironing, for which purpose it would appear to warrant a *C-Not Recommended* rating.

Important Note Regarding the National Watermatic Washing Machine

SEVERAL subscribers have written to CR about National Watermatic washing machines which they purchased several years ago after a favorable report by CR. These machines were reported to have given very satisfactory service, but when in time the special rubber bags used in the drying device failed, users were unable to obtain the needed repair part, since the original manufacturer of the washer had gone out of business.

We are glad to advise that a number of replacement bags can now be purchased. Address inquiries to: Associated Manufacturers, Inc., Waterloo, Iowa (present price is \$4 each, plus postage). This firm receives a limited quantity from the suppliers from time to time, and will fill orders as soon as possible.

Off the Editor's Chest

(Continued from page 2)

commodations can be readily obtained this summer during the peak months of July and August is not clear at the present time. It is certain, however, that good, moderate-priced accommodations will be spoken for early. In Florida, when swank hotels were having trouble finding customers for their high-priced accommodations, the better motor courts were reported to be filled each night.

The motor-court type of accommodation is becoming increasingly attractive to the long-distance traveler, who finds it much more convenient to park his car in front of or beside his cabin on the outskirts of a city than to drive through heavily congested traffic to get to a hotel and park-

ing lot or to pay an extra dollar or two for garage space for the night, and a tip to a few functionaries to take his car away at night and bring it back when needed next day.

The names of motor courts in particular sections can often be obtained by writing the local (state or city) chamber of commerce. Other listings will be found in guides put out by the American Automobile Association; in *Lodging for a Night*, by Duncan Hines (\$1.50, P.O. Box 548, Bowling Green, Ky.); and *Guide to United Motor Courts* (free from United Motor Courts, 318 Railway Exchange Bldg., Denver 2). Long-distance travelers report that it is wise to find a place to stay for the night by 4 P.M., for after that time the best accommodations are usually taken. Prices for the good motor courts are about the same as those for hotel accommodations.

Taking a trip can be lots of fun if the trip can be planned so that

you will avoid, so far as possible, travel through traffic-congested cities, and so that you will not have to creep along at 20 miles an hour in a traffic line a mile long over a bumpy, rocky detour or spend the night in a cabin with a leaky roof because it is the only one left.

Remember that a lot of people had to stay home a great deal more this winter than they normally would because of weather conditions and roads, and accordingly accommodations everywhere will be crowded until these travel-starved motorists get the wanderlust out of their systems.

Check your route in advance, in as great detail as your time permits.

Make reservations ahead of time, if possible, and keep your gasoline tank well filled. And don't say we didn't warn you that things may be far different from what they used to be for travelers.

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†indicates that listings of names or brands are included.



Ratings of Motion Pictures



THIS section aims to give critical consumers a digest of opinion from a wide range of motion picture reviews, including the motion picture trade press, leading newspapers and magazines—some 19 different periodicals in all. The motion picture ratings which follow thus do not represent the judgment of a single person, but are based on an analysis of critics' reviews.

The sources of the reviews are:

Box Office, Charm, Chicago Daily Tribune, The Christian Century, Cue, Daily News (N.Y.), The Exhibitor, Harrison's Reports, Motion Picture Herald, National Legion of Decency List, Newsweek, New York Herald Tribune, New York Times, Parents' Magazine, Release of the D.A.R. Preview Committee, Successful Farming, Time, Variety (weekly), and Unbiased Opinions of Current Motion Pictures which includes reviews by the General Federation of Women's Clubs, the American Legion Auxiliary, National Film Music Council, and others.

The figures preceding the title of the picture indicate the number of critics who have been judged to rate the film A (recommended), B (intermediate), or C (not recommended) on its entertainment values.

Audience suitability is indicated by "A" for adults, "Y" for young people (14-18), and "C" for children, at the end of each line.

Descriptive abbreviations are as follows:

adv—adventure	hist—founded on historical incident
biog—biography	mel—melodrama
c—in color (Technicolor, Cinecolor, Trucolor, Magnacolor, Vitacolor, etc.)	mus—musical
car—cartoon	mys—mystery
com—comedy	nov—dramatization of a novel
cri—crime and capture of criminals	rom—romance
doc—documentary	soc—social-problem drama
dra—drama	trav—travelogue
fan—fantasy	war—dealing with the lives of people in wartime
	wes—western

A	B	C	
—	4	1	Adventures of Casanova.....adv A
—	7	6	Albuquerque.....wes-c A
—	3	3	Alias a Gentleman.....com A
1	4	3	All My Sons.....dr A
—	3	2	Along the Oregon Trail.....mus-wes-c AYC
—	5	9	Always Together.....com A
—	—	—	An Ideal Husband (See Ideal Husband, An)
—	4	1	Angels' Alley.....com AYC
—	2	2	April Showers.....mus-com A
1	1	4	Arch of Triumph.....war-dr A
—	—	4	Arnold Affair, The.....cri-mel A
—	4	1	Bandits of Dark Canyon.....wes AYC
—	8	—	Beauty and the Beast.....fan A
—	3	6	Beware of Pity.....dr A
2	4	1	B. F.'s Daughter.....nov A
—	4	5	Big Town After Dark.....cri-mel A
—	8	—	Bill and Co.....com-c YC
1	12	3	Bishop's Wife, The.....fan A
2	3	1	Big Clock, The.....cri-mel A
—	3	8	Black Bart.....wes-c AY
—	2	2	Black Hills.....mus-wes AYC
—	1	5	Blonde Savage.....adv AY
—	5	3	Blondie in the Dough.....com AYC
—	3	2	Blondie's Anniversary.....com AYC
—	—	6	Blue Veil, The.....dr A
—	—	5	Bohemian Rapture.....mus-biog A
—	4	2	Bowery Buckaroos.....com AYC
—	4	2	Bride Goes Wild, The.....com A
—	—	5	Buckaroo from Powder River.....mus-wes AYC
—	3	2	Bulldog Drummond Strikes Back.....mys-mel AY
—	2	7	Bury Me Dead.....cri-mel A
1	12	1	Bush Christmas.....mel YC

A	B	C	
—	4	2	Caged Fury.....mel AY
1	11	2	Call Northside 777.....doc-mel A
—	4	3	Campus Honeymoon.....mus-com A
1	9	2	Captain Boycott.....hist-dr A
1	10	5	Captain from Castile.....hist-dr-c A
—	2	5	Caravan.....adv A
—	3	4	Carnival of Sinners.....dr A
—	—	—	Cary and the Bishop's Wife (See Bishop's Wife, The)
—	—	4	Case of the Baby Sitter.....com A
2	11	2	Cass Timberlane.....nov A
—	2	1	Cavalleria Rusticana.....mus-dr A
—	5	1	Challenge, The.....mys-mel AY
—	3	1	Check Your Guns.....mus-wes AYC
—	4	1	Cheyenne Takes Over.....wes AYC
—	1	2	Children on Trial.....doc-dr A
—	3	2	Chinese Ring, The.....mys-mel AYC
—	2	3	Comedy Carnival.....com-c A
—	1	3	Crime and Punishment.....dr A
—	3	5	Crime Doctor's Gamble, The.....cri-mel A
—	9	6	Daisy Kenyon.....dr A
—	3	3	Dangerous Years.....mel AYC
—	8	6	Dark Passage.....nov A
—	5	—	Design for Death.....war-doc A
—	2	12	Desire Me.....war-dr A
—	—	7	Devil Ship.....mel A
—	2	6	Devil's Envoy, The.....fan A
—	4	5	Dick Tracy Meets Gruesome.....mel A
3	11	1	Double Life, A.....dr A
—	5	4	Driftwood.....dr AYC
—	1	4	Elixir of Love.....mus-dr A
1	3	8	Escape Me Never.....dr A
1	5	2	Eternal Return, The.....dr A
—	8	4	Exile, The.....hist-dr AY
—	1	6	Exposed.....cri-mys AY
—	6	4	Fabulous Texan, The.....mel A
1	5	1	Fanny.....dr A
—	1	3	Farewell, My Beautiful Naples.....mus-dr A
—	4	1	Farrebique.....dr A
—	5	1	Fighting Mad.....mel AY
—	1	4	Fighting Vigilantes.....wes AYC
—	3	8	Flame, The.....cri-mel A
—	—	4	Flashing Guns.....wes AYC
—	1	2	Fledermaus, Die.....mus-com-c A
—	1	3	For You I Die.....mel A
3	5	12	Forever Amber.....dr-c A
—	8	7	Foxes of Harrow, The.....adv A
2	11	5	Fugitive, The.....dr A
—	6	3	Furia.....mel A
—	—	8	Gangster, The.....mel A
—	4	6	Gas House Kids in Hollywood.....mys-mel AYC
—	5	1	Gay Ranchero, The.....mus-wes-c AYC
—	4	12	Gentleman's Agreement.....dr A
—	4	1	Girl of the Canal, The.....dr AY
—	3	5	Glamour Girl.....mus-com A
—	9	8	Golden Earrings.....war-mel A
—	10	6	Good News.....mus-com-c AYC
—	4	1	Great Dawn, The.....mus-dr A
—	2	3	Great Glinka, The.....mus-biog A
1	4	10	Green Dolphin Street.....dr AY
—	1	2	Gun Talk.....wes AYC
—	—	—	Hal Roach Comedy Carnival (See Comedy Carnival)
—	—	6	Half-Past Midnight.....mys-mel A
—	1	4	Hat Box Mystery, The.....mys-mel A
—	—	3	Hawk of Powder River, The.....wes AYC
—	3	2	Heading for Heaven.....com A
1	8	6	High Wall.....mel A
—	9	—	Holiday Camp.....com A
—	4	2	Homesteaders of Paradise Valley.....wes AYC
2	11	3	Hucksters, The.....nov A
—	3	9	Hungry Hill.....dr A
—	4	1	Hunted, The.....mel A

A	B	C				A	B	C			
—	3	1	I Became a Criminal.....	cri-mel	A	—	—	4	Road to the Big House.....	mel	A
—	6	3	I Love Trouble.....	mys-mel	A	—	1	2	Robin Hood of Monterey.....	wes	AYC
2	5	—	I Remember Mama.....	com	AYC	—	3	2	Robin Hood of Texas.....	mus-wes	AYC
—	5	10	I Walk Alone.....	cri-mel	A	—	3	1	Rose of Santa Rosa.....	mus-com	AYC
1	4	8	Ideal Husband, An.....	com-c	A	—	3	5	Roses Are Red.....	cri-mel	A
—	2	4	Idiot, The.....	dr	A	—	3	2	Russian Ballerina.....	mus-com	A
—	9	8	If Winter Comes.....	dr	A	—	2	5	Saigon.....	mel	A
1	5	5	If You Knew Susie.....	mus-com	AYC	—	1	2	"Sainted" Sisters, The.....	dr	A
—	3	1	In Self Defense.....	mel	A	—	5	9	San Quentin.....	mel	A
—	2	1	In the Name of Life.....	dr	A	—	—	4	Scared to Death.....	mys-c	A
—	2	6	Intrigue.....	mel	A	—	4	—	Schoolgirl Diary.....	dr	AYC
—	3	8	Invisible Wall, The.....	cri-mel	A	—	3	—	Scudda-Hoo! Scudda-Hay!.....	nov-c	AYC
1	6	10	It Had to Be You.....	com	A	—	3	9	Secret Beyond the Door.....	mel	A
—	2	11	Jassy.....	nov-c	A	—	17	2	Senator Was Indiscreet, The.....	com	A
1	4	1	Jenny Lamour.....	mus-mel	A	—	1	3	Shadow Valley.....	mus-wes	AYC
—	2	2	Jiggs and Maggie in Society.....	com	AY	—	3	3	Shakuntala.....	dr	A
—	4	—	Joe Palooka in the Knockout.....	mys-mel	AY	—	5	9	Sign of the Ram, The.....	dr	A
1	9	5	Killer McCoy.....	mel	A	3	6	—	Sitting Pretty.....	com	A
—	—	3	King of the Bandits.....	wes	AYC	—	2	2	Six-Gun Law.....	mus-wes	AYC
—	3	2	Last Days of Boot Hill.....	mus-wes	AYC	—	11	6	Sleep, My Love.....	cri-mel	A
—	6	—	Last Round-Up, The.....	mus-wes	AYC	—	4	3	Slippy McGee.....	dr	AYC
—	—	5	L'Atalante.....	dr	A	—	1	2	Smart Politics.....	mus-com	AY
—	2	1	Let's Live Again.....	com	A	—	3	—	Smart Woman.....	dr	A
—	1	4	Linda Be Good.....	mus-com	A	—	2	1	Smoky River Serenade.....	mus-wes	AYC
—	5	4	Lone Wolf in London, The.....	mys-mel	A	—	3	2	Smugglers, The.....	mel-c	A
1	7	5	Long Night, The.....	dr	A	1	10	6	So Well Remembered.....	war-dr	A
—	6	8	Lost Moment, The.....	dr	A	2	6	3	Song of My Heart.....	mus-dr	AYC
—	5	9	Love from a Stranger.....	cri-mel	A	—	2	3	Speed to Spare.....	mel	A
—	8	5	Love Laughs at Andy Hardy.....	mus-com	AY	—	7	4	Spirit of West Point, The.....	dr	AYC
—	4	2	Lover's Return, A.....	com	A	—	1	2	Spring.....	mus-com	A
—	1	2	Lucia di Lammermoor.....	mus-dr	A	—	1	3	Stage to Mesa City.....	wes	AYC
—	1	3	Lucky Bride, The.....	mus-com	A	—	5	1	Story of Tosca, The.....	mus-dr	A
—	2	2	Madonna of the Desert.....	mel	AY	—	1	2	Stranger from Ponca City, The.....	mus-wes	AYC
—	7	6	Magic Town.....	dr	A	1	2	1	Summer Holiday.....	mus-com-c	A
—	1	7	Main Street Kid, The.....	com	AY	—	2	4	Sweet Genevieve.....	mus-com	A
—	11	4	Man About Town.....	com	A	—	3	—	Swing the Western Way.....	mus-wes	AYC
—	1	6	Man of Evil.....	mel	A	—	10	5	Swordsman, The.....	dr-c	AYC
—	1	3	Marco Visconti.....	adv	A	—	—	5	Symphonie Fantastique, La.....	mus-biog	A
—	3	2	Marshall of Cripple Creek.....	wes	AYC	2	11	2	T-Men.....	doc-dr	AYC
—	1	4	Mary Lou.....	mus-com	AY	—	1	2	Take My Life.....	mys-mel	A
—	3	1	Mating of Milly, The.....	com	AY	1	6	3	Tawny Pipit, The.....	com	AYC
—	—	4	Midnight in Paris.....	cri-mys	A	2	5	1	Tender Years, The.....	dr	AYC
—	7	5	Miracle Can Happen, A.....	com	A	—	2	6	Tenth Avenue Angel.....	dr	AY
1	2	3	Miracle of the Bells.....	dr	AYC	—	3	11	That Hagen Girl.....	dr	A
—	5	9	Mourning Becomes Electra.....	dr	A	1	10	4	This Time for Keeps.....	mus-com-c	A
—	—	6	Mr. Reckless.....	mel	A	—	8	6	Three Daring Daughters.....	mus-com-c	A
—	1	5	My Father's House.....	doc-dr	A	—	3	2	Thunder in the Valley.....	dr-c	AYC
2	6	6	My Girl Tisa.....	dr	AY	3	8	—	To Live in Peace.....	war-mel	AY
—	11	3	My Wild Irish Rose.....	mus-biog-c	AY	—	12	2	To the Ends of the Earth.....	doc-mel	AY
4	5	2	Naked City, The.....	mel	A	—	—	4	Tornado Range.....	mus-wes	AYC
—	8	7	Nicholas Nickleby.....	nov	AY	4	6	4	Treasure of the Sierra Madre, The.....	dr	A
—	7	11	Night Song.....	mus-dr	A	—	—	4	Twins.....	com	A
—	6	13	Nightmare Alley.....	mel	A	—	2	5	Two Blondes and a Redhead.....	mus-com	A
—	2	1	Oklahoma Badlands.....	wes	AYC	—	8	8	Tycoon.....	mel-c	AY
—	7	1	On the Old Spanish Trail.....	mus-wes-c	AYC	—	8	7	Unconquered.....	hist-c	A
—	3	5	Open Secret.....	mel	A	—	3	1	Under Colorado Skies.....	wes-c	AYC
—	6	5	Out of the Blue.....	com	A	—	7	5	Unsuspected, The.....	mys-mel	A
—	7	10	Out of the Past.....	mys-mel	A	—	3	5	Untamed Fury.....	mel	A
—	5	3	Pacific Adventure.....	dr	AYC	—	3	10	Upturned Glass, The.....	cri-dr	A
—	7	1	Panhandle.....	wes-c	A	—	—	5	Vacation Days.....	mus-wes	AYC
2	5	2	Panic.....	cri-mel	A	1	12	2	Voice of the Turtle, The.....	com	A
1	10	3	Paradine Case, The.....	mys-mel	A	—	7	2	Volpone.....	com	A
—	1	3	Passionelle.....	dr	A	—	3	1	Voyage Surprise.....	com	AY
1	7	3	Pearl, The.....	dr	A	—	—	3	We Lived Through Buchenwald.....	war-doc	A
—	5	2	Philo Vance's Secret Mission.....	cri-mel	AY	—	2	4	Western Heritage.....	wes	AYC
—	2	3	Piccadilly Incident.....	war-dr	A	—	—	6	When a Girl's Beautiful.....	mus-com	A
—	5	10	Pirates of Monterey.....	mel-c	A	—	11	4	Where There's Life.....	com	A
—	—	4	Prairie Express.....	wes	AYC	—	1	3	Whispering City.....	cri-mel	A
—	1	2	Prairie Raiders.....	mus-wes	AYC	—	—	3	White Stallion.....	wes	AYC
—	5	5	Prince of Thieves, The.....	hist-dr-c	AYC	—	2	3	Wild Frontier, The.....	wes	AYC
—	4	4	Railroaded.....	cri-mel	AY	—	4	2	Wild Horse Mesa.....	mus-wes	AYC
—	4	2	Raven, The.....	mys-mel	A	—	2	3	Winner, The.....	mus-dr	A
—	12	—	Relentless.....	wes-c	AY	—	9	3	Wistful Widow of Wagon Gap, The.....	com	A
—	3	3	Return of Rin Tin Tin.....	dr-c	YC	—	1	5	Woman from Tangier, The.....	mel	A
—	1	4	Return of the Lash.....	wes	AYC	—	11	6	Woman's Vengeance, A.....	mel	A
—	3	2	Return of the Whistler, The.....	mys-mel	AYC	—	1	6	Women in the Night.....	war-mel	A
—	4	1	Revenge.....	war-dr	A	—	3	2	Wreck of the Hesperus, The.....	dr	AYC
—	12	4	Ride the Pink Horse!.....	cri-mel	A	—	10	4	You Were Meant for Me.....	mus-com	AY
1	16	—	Road to Rio.....	mus-com	AY	—	1	3	Zygmunt Kolosowski.....	war-dr	A

The Consumers' Observation Post

(Continued from page 4)

in Science, reveals an unmistakable and distressing picture of favoritism and bias. On the basis of his figures, it appears that the older institutions of the eastern seaboard, in a section containing less than 30 percent of this country's population, receive 50 to 80 percent of all research funds. The New England and North Atlantic states, for example, with 30 percent of the population, contributed 39.5 percent of the cancer funds collected, and received 66.7 percent of the research funds disbursed. Dr. Mills points out that institutional representation on research committees that have the authority to disburse such funds too often means top recipient rating for grants of funds. He suggests that such favoritism indicates that scientists are no more able to achieve impartiality in distribution of funds than politicians, and, in the interests of widest development of research throughout the country, it is in order to require that a scientist in position of power to allot subsidies and grants disqualify himself from voting funds to his own institution.

* * *

BUICK OWNERS whose cars are in good shape except for the engines will be interested to learn that brand new engines at reasonable prices are available for their cars from authorized Buick dealers. The engines are complete except for generator and starter and offered at \$346.50 for Buick Special and Super engines, \$462.50 for Buick Roadmaster. Installation charge for either engine is around \$28. One reason mentioned for the availability of these engines is that engine production is so far ahead of bodies, due to the shortage of steel sheets, that it is necessary to dispose of the surplus production.



READY IN OCTOBER

It's a little early to announce

the 1948-49 Annual Cumulative Bulletin,

but

some people like to be forehanded . . .

The *Annual Cumulative Bulletin* is the big 200-page summary of a wide range of CR's previous findings *plus* much new material that has never before appeared in any CR Bulletin. Some of the topics treated are: Household Appliances and Equipment, Photographic Equipment and Supplies, Heating Equipment and Fuel, Automobiles, Radio and Phonograph Equipment, Cosmetics and Toilet Supplies, Medicine and Hygiene.

The 1948-49 edition is expected to be off the press the latter part of September and it will be mailed shortly thereafter to all who have placed their special orders for it. Since it is a confidential issue, it is available only to individuals for their personal use and that of their immediate families (sorry, no library or school orders). It is priced at \$1.50 to individual subscribers to Consumers' Research Bulletin; \$2.75 to other individuals.

TO PLACE AN ADVANCE ORDER NOW, PLEASE TURN THE PAGE FOR A CONVENIENT BLANK.

RECENTLY TESTED:

The Metro Freezer Cabinet Thermometer (Metro Mfg. Co., 38-11 31 St., Long Island City 1, New York) is a dial type remote-indicating thermometer for use with deep freezer units, selling for \$5.95. Its action depends upon the expansion of a vapor enclosed in a copper bulb, with the pressure transmitted through a 4-foot length of thin copper tubing to the pointer and dial unit. Because of its wholly unsatisfactory scheme of dial graduation, the instrument with its present design would appear to warrant a C rating. The graduations on the dial face were of an irrational sort, and it is hoped that no other thermometer manufacturers will follow the example of this maker, which would render the reading and calibration of the instrument highly uncertain. For example, zero on the dial, instead of being a definite mark, is a zone, the purpose of which we presume is to permit the manufacturer to avoid the responsibility for accurate calibration that would apply if the zero were definitely located. Readings, however, so far as they could be observed, were found to be correct.

Dip-Wipe (Snap Chemical Co., Chicago 17) is a jewelry and eyeglass cleaner which sells for 35 cents a 5-1/2 fl. oz. jar. Directions call for dipping the article to be cleaned into the fluid and then wiping it with a dry clean cloth. A brush is provided for applying Dip-Wipe to articles encrusted with dirt or grime. Analyses showed the composition of the sample to be about 3.5% ammonium hydroxide, less than .5% soap, and the balance water. In simple terms, Dip-Wipe is a weak household liquid ammonia with soap. Ammonia and soap are good cleaners for objects that have a greasy or cloudy film caused by gas and vapors in the air, and thus the product would be useful for brightening gold and silver jewelry and glassware; however, the results would be little different from those achieved by the householder using ordinary household ammonia diluted in water in the customary way.

Old English Powdered Cleaner, marketed by Boyle-Midway Inc., Jersey City, N. J., at 25 cents for a 1-1/2 pound box, is a peach-colored powder for cleaning dirt from "walls, woodwork, painted surfaces, and general household use." It is also sold as a water softener. Its composition was found to be water, 22%; ammonium chloride, 4%; trisodium phosphate dodecahydrate, 15%; and sodium carbonate, 59%. Thus the product is another one of the familiar mixtures of trisodium phosphate and another alkaline sodium salt—in this case the very inexpensive sodium carbonate or washing soda. The ammonium chloride present in the mixture is of no particular importance. Its function is believed to be more psychological than useful, in that consumers often are impressed by the presence of a slight ammoniacal odor in a cleaning mixture.

Consumers' Research, Inc. Washington, N. J.

Please enter my order as checked. It is understood that my handling of any CR material which is marked "The analyses of commodities, products, or merchandise appearing in this issue of the Consumers' Research Bulletin are for the sole information of Consumers' Research subscribers" will be in accordance with that direction.

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PHONOGRAPH RECORDS



By Walter F. Grueninger

Please Note: In the ratings AA indicates highly recommended; A, recommended; B, intermediate; C, not recommended.

ORCHESTRA

Britten: *Peter Grimes* ("Four Sea Interludes" and "Pascaglia"). Concertgebouw Orchestra of Amsterdam under Eduard van Beinum. 6 sides, Decca Set EDA 50. \$7.35. First recording of music from the new opera which the Met produced in February. The descriptive Interludes—"Dawn," "Sunday Morning," "Moonlight," "Storm"—and the "Pascaglia" are the most likely to appeal to collectors of modern symphonic compositions. Expert performance and vivid, room-resonant recording made in the Concertgebouw, Amsterdam. Import.

Interpretation AA
Fidelity of Recording AA

Mozart: *Symphony No. 40 in G Minor*. Pittsburgh Symphony Orchestra under Fritz Reiner. 6 sides, Columbia Set V 727. \$6.85. The first Columbia recording pressed on Vinylite. Also offered on regular Columbia surfaces at \$4.60. This great symphony belongs in every library of serious music. Reiner plays it beautifully, but there are tenuous moments for horns on side 5. Wide range, resonant recording which challenges English Decca, though the violins, about one inch in on side 2, sound strident. The only competitor, considering all factors, that approaches this set is Beecham's Columbia Set 316 which offers a noble interpretation but is recorded with far less range and body.

Interpretation AA
Fidelity of Recording AA

Tchailkovsky: *Francesca da Rimini*. Boston Symphony Orchestra under Koussevitzky. 6 sides, RCA Victor Set 1179. \$4.75. Dramatic work. Infinite spirit in Koussevitzky's interpretation but more poetry in Beecham's Columbia Set 447. Koussevitzky is brilliantly recorded, Beecham smoothly, on quieter surfaces.

Interpretation A
Fidelity of Recording A

Tchailkovsky: *Symphony No. 1* ("Winter Daydreams") (9 sides) & *Eugen Onegin*—Act 2; Waltz (1 side). Indianapolis Symphony Orchestra under Fabien Sevitzky. RCA Victor Set 1189. \$7.35. Apparently a first recording. Also Tchailkovsky's first major work, revised by him 16 years after the initial performance. Strongly Russian in flavor, with a lovely slow movement. Weak development. Commendable performance. One-microphone recording technique, rather far from orchestra, which makes for lively room resonance, but loses detail. Frequency range satisfactory, though not wide. Good dynamic range.

Interpretation AA
Fidelity of Recording A

INSTRUMENTAL

Bach: *Chaconne* (3 sides) & *Gavotte* (1 side). Andres Segovia (guitar). Musicraft Set 85. \$3. Connoisseurs will do well to buy this set at once. It presents the best recording of a guitar I have ever heard (on surfaces that do scratch a bit, however) by the world's foremost classical guitarist. The major work is a transcription of great Bach. Although I prefer it on a violin, as a novelty the set is extraordinary.

Interpretation AA
Fidelity of Recording AA

Bach: *Eight Little Preludes and Fugues*. Ernest White (organ). 8 sides, Technichord Set T 10. \$7.45. Obvious in these gems is the fluency and variety of Bach's organ writing. Impressive playing on the brilliant, clear, new organ in the performer's New York studio, Church of St. Mary the Virgin. The commendable accompanying booklet, which includes the complete score, states the recording was made with a low frequency turnover at 650 cps. and with 6 db/octave lift above 2500 cps. to about 9000 cps.

Interpretation AA
Fidelity of Recording AA

Brahms: *Variations on a Theme by Paganini*. Jakob Gimpel (piano). 4 sides, Vox Set 209. \$3.50. A monumental work calling for prodigious technique and musicianship. Gimpel

has both. Dry but clear studio recording, high volume level, some surface noise. Petri, in oldish Columbia Set X 80, offers a performance that digs deep, but his recording is muddy, heavily bassed, low in volume, though pressed on quiet surfaces. Overall, Vox.

Interpretation AA
Fidelity of Recording A

VOCAL

Fauré: *Twelve Songs*. Isabel French (soprano) (3 sides) & Olympia di Napoli (mezzo-soprano) (3 sides). Technichord Set T 7. \$5.90. As few of Fauré's songs are recorded, this album is particularly welcome to connoisseurs. Both ladies know the style and sing with charm but the freshness and warmth of Miss di Napoli's voice make her singing more attractive. Well balanced recording.

Interpretation A
Fidelity of Recording AA

Gluck: *Orfeo ed Euridice*. Ferrier, Vlachopoulos, Ayars (singers) with the Glyndebourne Festival Chorus and the Southern Philharmonic Orchestra under Fritz Stiedry. 14 sides, Decca Set EDA 39. \$15. An abridged version imported from England. One of Gluck's finest works (sung here in Italian) which founded the modern school of opera. Many tempi are uncommonly fast, making it impossible for the singers to give their best. Ferrier, for one, has some trouble with the language. Instrumentalists contribute a routine performance, as you may hear in the expressionless flute solo. Recording is topflight excepting for dull strings and the loudest choral passages which are overcut, causing distortion in the form of rattle. Readers may wish to compare this set with the praised Columbia Set Op. 15 if it can be found.

Interpretation B
Fidelity of Recording A

Menotti: *The Medium* (14 sides) and *The Telephone* (6 sides). Original Broadway Cast under Emanuel Balaban. Columbia Set 726 (2 volumes). \$14.70. First American operas recorded in their entirety. Among recent releases, I can think of few better investments for the collector of vocal music. On records *The Telephone* is no less whimsical than in the theater. *The Medium* loses its *Grand Guignol* sets and Toby the deaf mute, but detailed program notes fill in. The impending sense of terror, however, is no less evident than in the theater for essentially the music carries the show. Casts are notable, with Marie Powers as Madame Flora in *The Medium* simply unforgettable. Excellent studio recording but a few sides are cut at a higher volume level than others. Disappointing is the fact that neither opera is available separately, though they appear in different albums. The set of the month.

Interpretation AA
Fidelity of Recording AA

LIGHT

Babalu'. Desi Arnaz and His Orchestra. 8 sides, RCA Victor Set P 198. \$4. Eight peppy, popular Latin numbers played with all stops out all the way.

Interpretation A
Fidelity of Recording B

Blue Danube. Ronnie Munro and His Orchestra. 8 sides, London Set LA 2. \$3.95. Abbreviated versions of Johann Strauss waltzes played by an orchestra of possibly a dozen. Clean recording. Import.

Interpretation AA
Fidelity of Recording AA

Romberg: Student Prince Selections

Genevieve Rowe (soprano) Glenn Burris (tenor). 6 sides, Majestic Set MZ4. \$4.15.

Interpretation B
Fidelity of Recording A

Risé Stevens (mezzo-soprano) Nelson Eddy (baritone) 6 sides, Columbia Set 724. \$3.75.

Interpretation AA
Fidelity of Recording AA

Majestic's singers, arrangements and direction are no match for Columbia's. Although Majestic's orchestra recording has a bounce lacking in Columbia's, on other accounts Columbia's recording is better.